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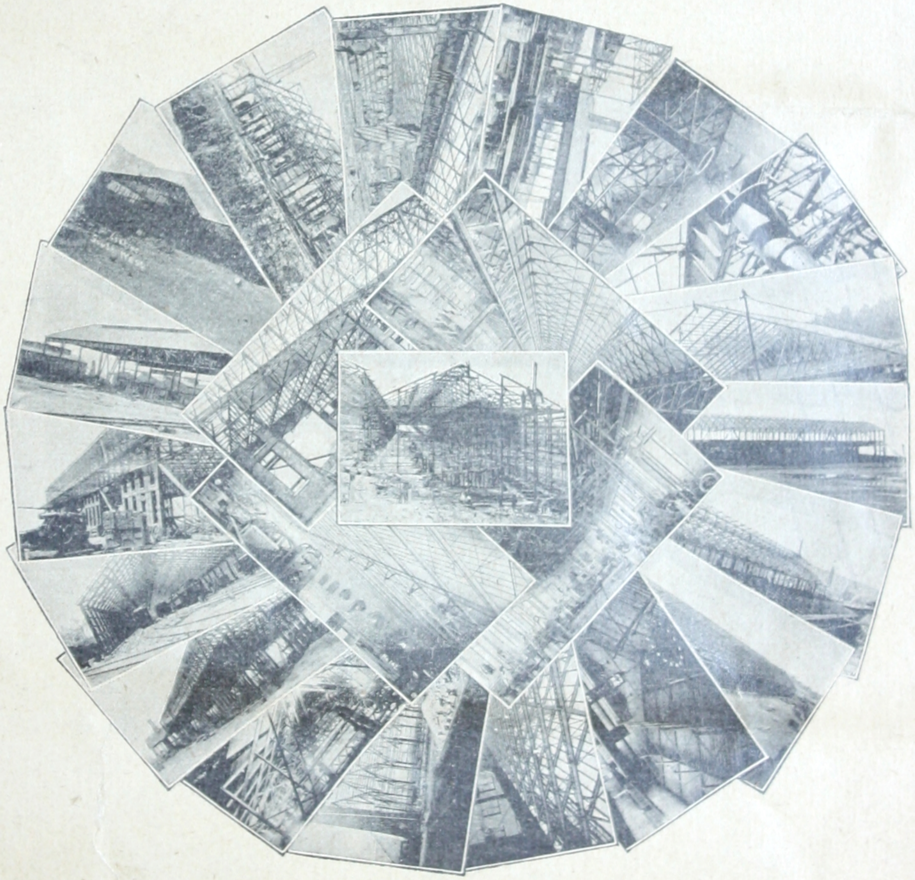
THE BERLIN IRON BRIDGE CO.



OCT 9 1890

OFFICE
AND WORKS

EAST BERLIN, CONN.

U. S. A.

The Case, Lockwood & Brainard Co., Printers, Hartford, Conn.

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THE BERLIN IRON BRIDGE COMPANY,

IRON RAILROAD BRIDGES,
IRON ROOFS,
WROUGHT IRON TURNTABLES,
IRON FIRE ESCAPES,
IRON BUILDINGS,
PLATE AND BOX GIRDERS FOR
BRIDGES AND BUILDINGS,
IRON HIGHWAY BRIDGES,
CORRUGATED IRON FIRE-PROOF
DOORS AND SHUTTERS,
CORRUGATED IRON,
STONE ARCH BRIDGES,
SUSPENSION BRIDGES,
ROLLED I BEAMS, CHANNELS,
ANGLES, ETC.

OFFICE AND WORKS

EAST BERLIN, CONN.

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JOHN TOWNE, Springfield, Mass.
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W. V. CLIFTON, Raleigh, N. C.

INTRODUCTION.

IN presenting to the public this Catalogue it is our intention to illustrate in a general way the different classes of work which we produce. Our business is to design and build Metallic Structures of all kinds and classes, and our experience in this class of work is very large. The illustrations in this Catalogue are taken direct from drawings or photographs of structures already built by us, and show exactly how they were built. We keep a large and experienced corps of Civil Engineers constantly in our employ, and are therefore able to prepare designs and estimates for all classes of Metallic Structures of every name and nature.

Our work is to be found in nearly every State of the Union. We have designed some of the largest Railroad and Highway Bridges and Manufacturing Buildings to be found in the United States.

Our endeavor is to please our patrons, and when we construct a Building or a Bridge we expect it to be first-class in every respect, and designed to meet the work it is required to perform.

Our large experience in Railroad Bridges gives assurance that work of this character entrusted to our charge will be designed and built in a first-class manner.

Our Patent Parabolic Truss for Highway Bridges is now so well known, and has been in such general use throughout the whole country in the past few years, that it needs no introduction from us.

We have designed and built some of the largest Manufacturing Buildings to be found in the United States, which enables us to thoroughly understand the needs of all classes of manufacturing business. Buildings designed and built by us will be constructed to accommodate the special class of business for which they are intended.

Among the iron buildings and iron roofs we now have under contract we will mention the following:

A Machine Shop, Boiler Shop, Bending Shed, and Ship Shed, for the Newport News Shipbuilding and Dry Dock Company, at Newport News, Va.

A Machine Shop for the Link Belt Machinery Company, at Chicago, Ill.

A Casting Shop for the Midvale Steel Company, at Nicetown, Pa.

A Puddling Mill for the Clinch Valley Coal and Iron Company, at Richlands, Va.

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A Machine Shop for the Link Belt Engineering Company, at Nicetown, Pa.
A Foundry Building for the Waterbury Farrel Foundry and Machine Company, at Waterbury, Conn.
A Stove Works for the Daniel E. Paris Stove Company, at Sioux City, Iowa.
A Pulp Mill for the Manufacturing Investment Company, at Madison, Me.
A Foundry Building for the Pratt & Cady Company, at Hartford, Conn.
A Rod Mill for Holmes, Booth & Haydens, at Waterbury, Conn.
A Tube Mill for the Coe Brass Manufacturing Company, at Torrington, Conn.
A Stock House for the Lackawanna Iron and Coal Company, at Franklin Furnace, N. J.

ENGINEERING AND SUPERINTENDENCE.

Our engineering force is equipped with civil and mechanical engineers skilled in the different branches of engineering science, and where it is desired, we can furnish complete plans and estimates of an entire plant, and also furnish engineers to superintend the construction of a plant from the foundation to the placing of the machinery.

Parties contemplating extensive works are often bothered and seriously hindered in their work, and the expense very materially increased because of a lack of proper superintendence. It is this work which we are prepared to undertake, and can furnish engineers who will remain on the ground to superintend, or superintend by occasional visits, according to the magnitude and difficulty of the work. Manufacturers entrusting this class of work to us can rest assured that it will be properly and thoroughly attended to.

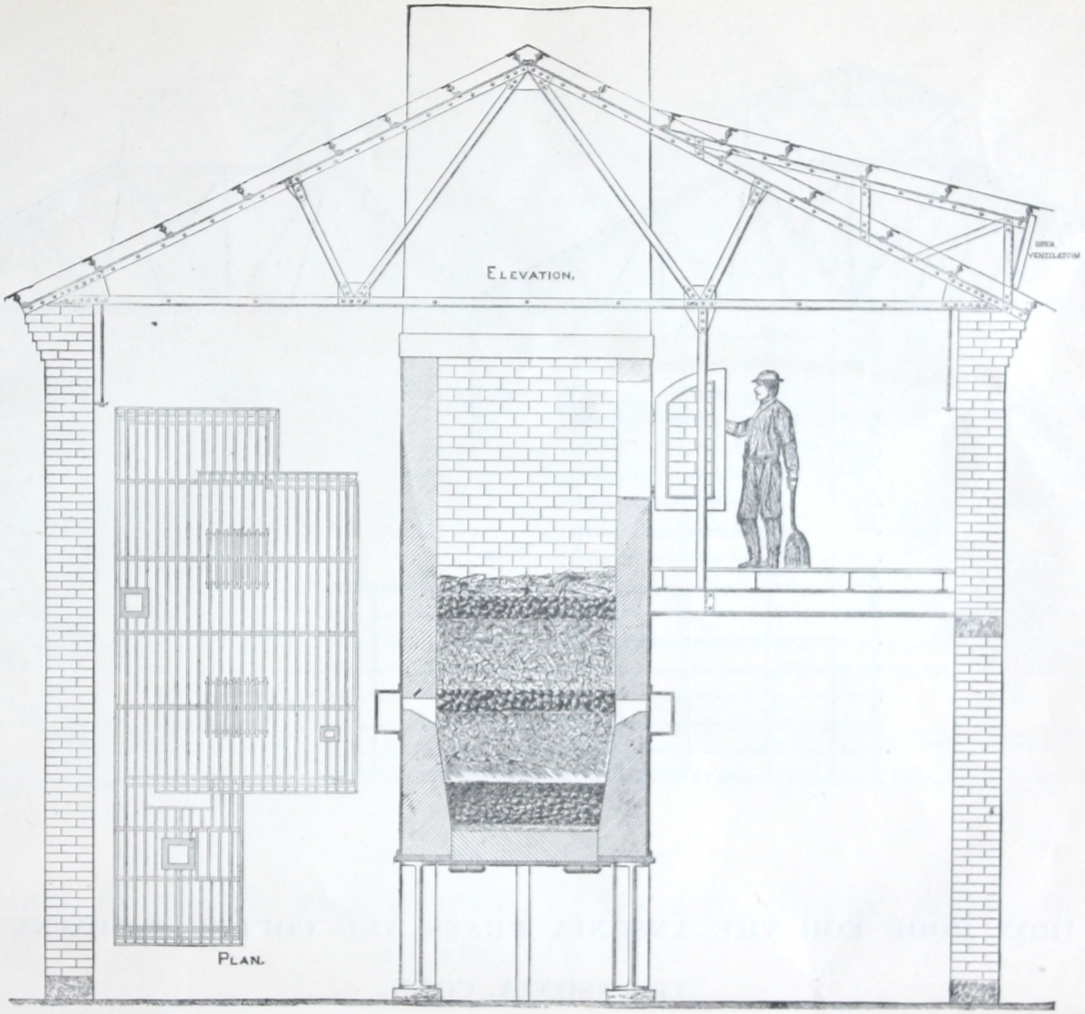
GENERAL.

Our work is so well known throughout the country that it is hardly necessary for us to give any list of corporations for which we have done work; but very often manufacturers desire to see an iron building in order to study the construction; and with this end in view, we give below a list of some of the iron buildings built by us, so that parties desiring can make an examination for themselves, and test the character and quality of our work.

Waterbury Brass Company,	Waterbury, Conn.
Billings & Spencer Company,	Hartford, Conn.
Stanley Rule and Level Company,	New Britain, Conn.

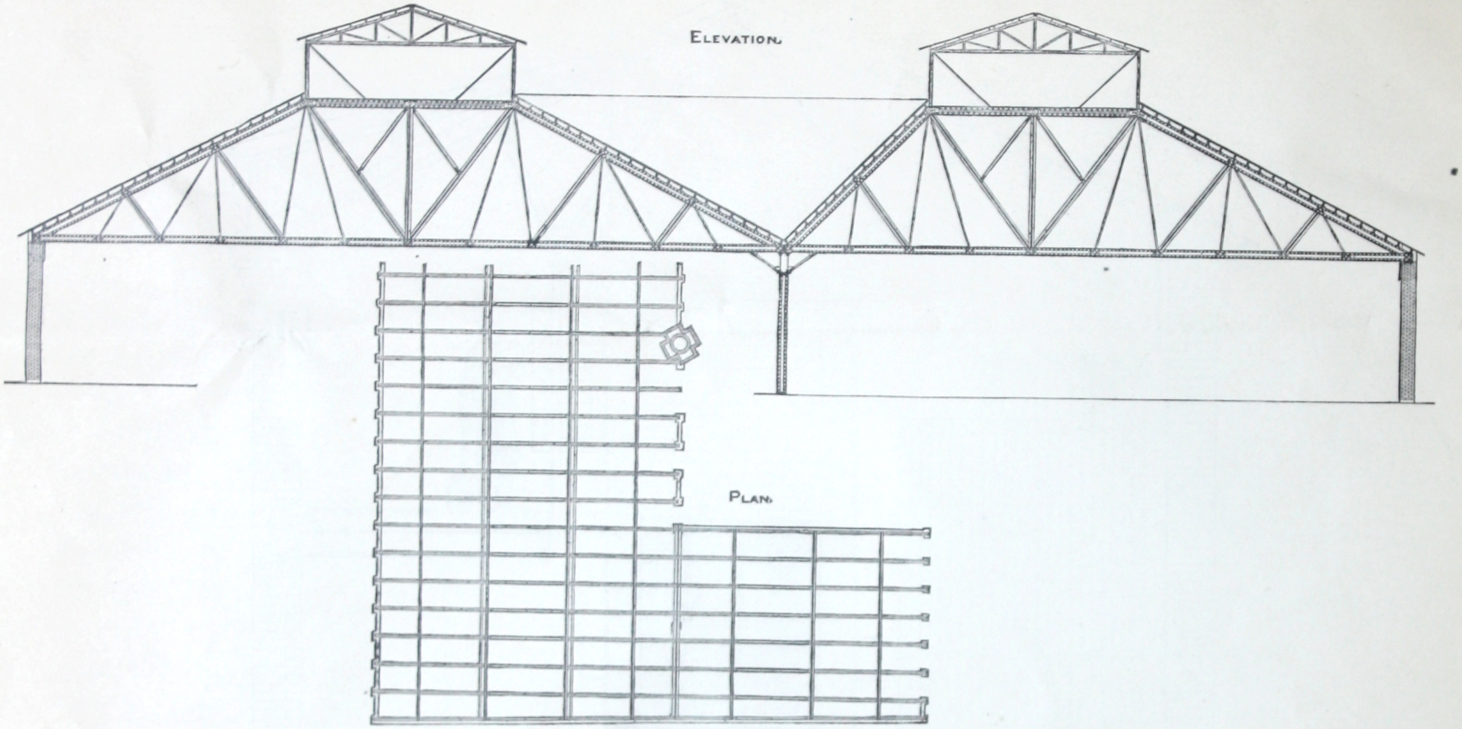
New Haven Copper Company,	Seymour, Conn.
Russia Cement Company,	Gloucester, Mass.
Lake George Pulp and Paper Company,	Ticonderoga, N. Y.
Eastern Forge Company,	Portland, Me.
Seymour Manufacturing Company,	Seymour, Conn.
Anaconda Smelting Works,	Anaconda, Montana.
Manchester Print Works,	Manchester, N. H.
Foot Guard Armory,	Hartford, Conn.
Sedgewick Hall,	Lenox, Mass.
Narragansett Electric Lighting Company,	Providence, R. I.
Duluth Iron and Steel Company,	Duluth, Minn.
Connecticut Electric Company,	Waterbury, Conn.
C. W. Hunt Company,	New York, N. Y.
Aluminum Brass and Bronze Company,	Bridgeport, Conn.
New York, New Haven, & Hartford Railroad Company,	New Haven, Conn.
Amoskeag Manufacturing Company,	Manchester, N. H.
Cheney Bros.,	Manchester, Conn.
New Haven Wire Company,	New Haven, Conn.
Russell & Erwin Manufacturing Company,	New Britain, Conn.
Cheshire Watch Company,	Cheshire, Conn.
L. B. Smith Rubber Company,	Setauket, L. I.
Bridgeport Armory,	Bridgeport, Conn.
Winchester Repeating Arms Company,	New Haven, Conn.
Millerton Iron Company,	Irondale, N. Y.
D. & H. Scovill,	Higganum, Conn.
Palmer Bros.,	Montville, Conn.
The Coe Brass Manufacturing Company,	Torrington, Conn.
Shelby Iron Works,	Shelby, Ala.
Ansonia Brass and Copper Company,	Ansonia, Conn.
City Water Works,	Burlington, Vt.
Waterbury Farrel Foundry and Machine Company,	Waterbury, Conn.
Brooklyn Brass and Copper Company,	Brooklyn, N. Y.
Clinch Valley Coal and Iron Company,	Richlands, Va.
Lackawanna Iron and Coal Company,	Franklin Furnace, N. J.
North Liberties Gas Company,	Philadelphia, Pa.
Titusville Iron Company,	Titusville, Pa.
Quinn Bros.,	Butte, Montana.

Putnam Machine Company,	Fitchburg, Mass.
Fowler Nail Company,	Seymour, Conn.
Holmes, Booth & Haydens,	Waterbury, Conn.
County Commissioners,	Bangor, Me.
Link Belt Engineering Company,	Nicetown, Pa.
Upson Nut Company,	Unionville, Conn.
Cafery Refinery Company,	Franklin, La.
Link Belt Machinery Company,	Chicago, Ill.
Danbury and Bethel Gas and Electric Light Company,	Danbury, Conn.
Pratt & Cady Company,	Hartford, Conn.
Newport News Shipbuilding and Dry Dock Company,	Newport News, Va.
Bridgeport Copper Company,	Bridgeport, Conn.
Scovill Manufacturing Company,	Waterbury, Conn.
Isabella Furnace,	Barneston, Pa.
Farrel Foundry and Machine Company,	Ansonia, Conn.
Manufacturing Investment Company,	Madison, Me.
Providence Gas Company,	Providence, R. I.
Montgomery Iron Company,	Port Kennedy, Pa.
Daniel E. Paris Stove Company,	Sioux City, Iowa.
Putnam Light and Power Company,	Putnam, Conn.
Lynn Gas and Electric Company,	Lynn, Mass.
Midvale Steel Company,	Nicetown, Penn.
Orono Pulp and Paper Company,	Basin Mills, Me.
Wilcox, Crittenden & Co.,	Middletown, Conn.
The Franklin Moore Company,	Winsted, Conn.
Bartlett Land and Lumber Company,	Bartlett, N. H.



ROOF OVER THE CASTING SHOP OF THE NEW HAVEN COPPER CO., AT SEYMOUR, CONN.

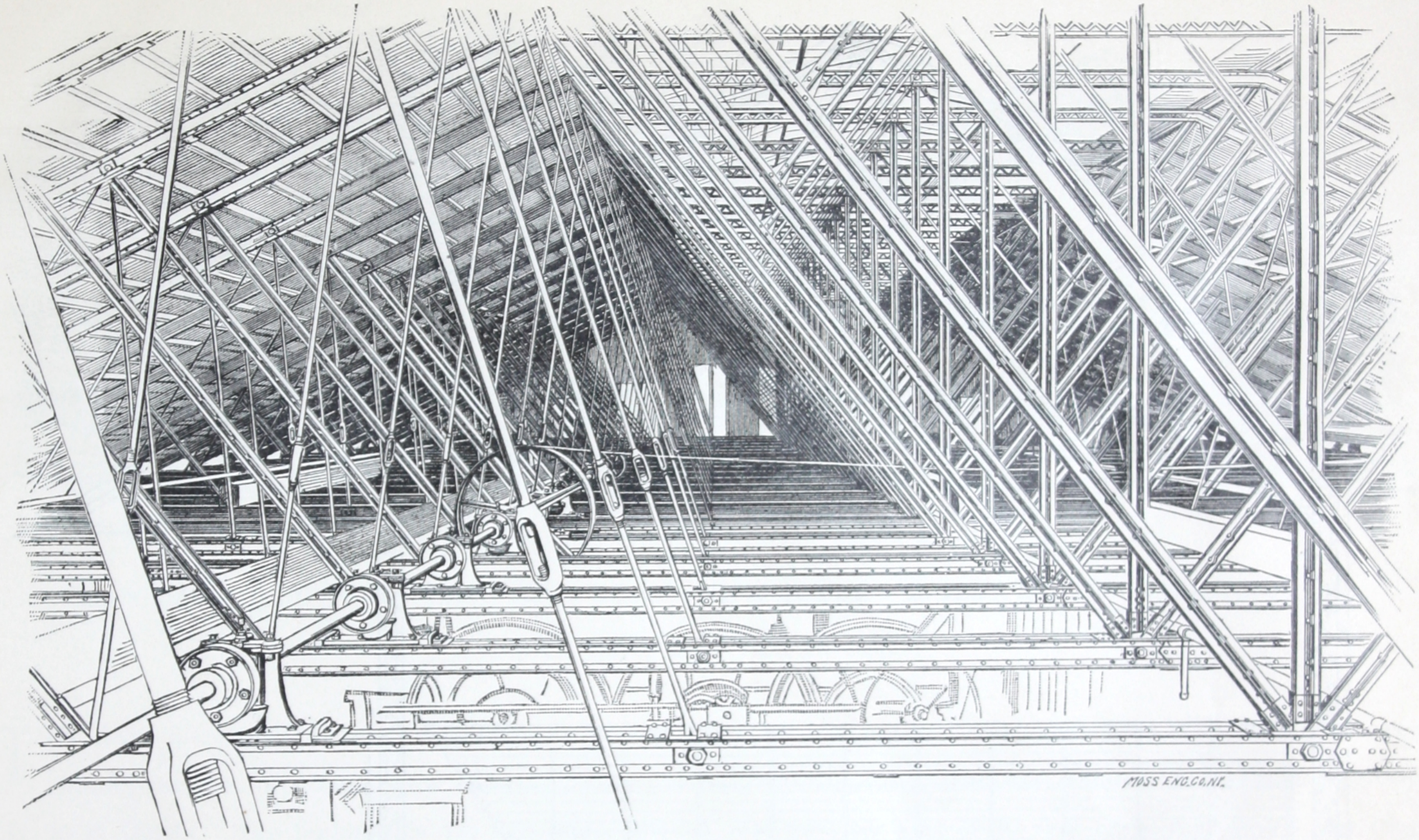
THE above illustration shows the general construction of an iron roof built by us for The New Haven Copper Co., at Seymour, Conn., from the design of R. W. Hill, Architect, Waterbury, Conn. The building is used for a casting shop, and is constructed entirely of brick and iron, as the danger from fire in a building of this kind is very great. There is not a particle of wood-work used anywhere about the construction of the building, so that there is no danger from fire, as there is nothing about the building which will catch fire and burn. At the point where the furnace is charged there is an iron platform supported from the roof — the platform not coming in contact with the cupola, so that this latter is left free to contract and expand from changes in temperature. The gases arising from a furnace of this kind necessitate thorough ventilation, and the main portion of the casting-shop is provided with a wrought-iron ventilator with swinging shutters on each side opening and closing by cords from the floor. Directly over the platform above the charging-door of the furnace there is an open dormer in the roof which allows free and uninterrupted ventilation in this part of the building. For buildings of this class the plan presents many novel features which especially recommend it to parties in need of this class of work.



IRON ROOF FOR THE ANSONIA BRASS AND COPPER COMPANY,

AT ANSONIA, CONN.

THIS illustration is taken direct from a drawing of an iron roof built by us for the Ansonia Brass & Copper Co., at Ansonia, Conn., over their Rolling Mill. The trusses are designed to conform in outline to other adjacent buildings. The building consists of two parts, that shown on the left being 250 feet long by 110 feet wide, and that portion shown on the right being 91 feet long by 70 feet wide. The trusses are placed 10 feet apart and have sufficient capacity over the portion where the lighter machinery is placed to lift 4 tons, or 8,000 pounds, and certain trusses covering the portion of the building where the heavy machinery is located have a capacity to lift 9 tons, or 18,000 pounds. The

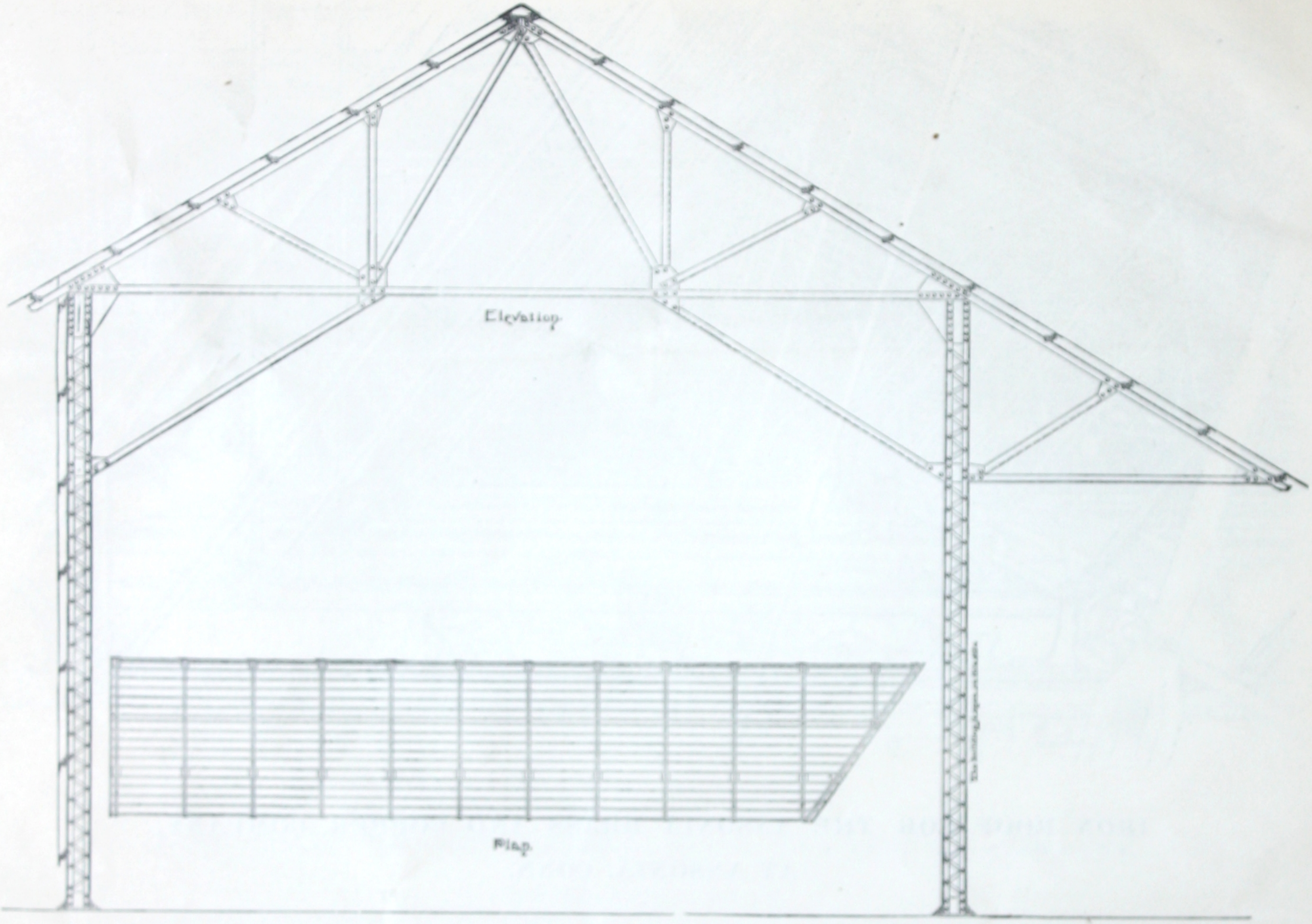

MOSS ENG.CO.N.Y.

IRON ROOF FOR THE ANSONIA BRASS AND COPPER COMPANY,
AT ANSONIA, CONN.

illustration shown on this page is taken direct from a photograph of the roof when completed, and shows the construction as seen from a point in the trusses. The trusses are entirely of iron, connected by wooden purlins and covered with matched boards and tin. Between the two buildings the trusses are supported on columns and heavy plate girders.

Where the conditions of span and loading are extreme, as in the present case, and in fact in the case of all Rolling Mills, a roof can be built nearly if not quite as cheaply of iron as of wood.

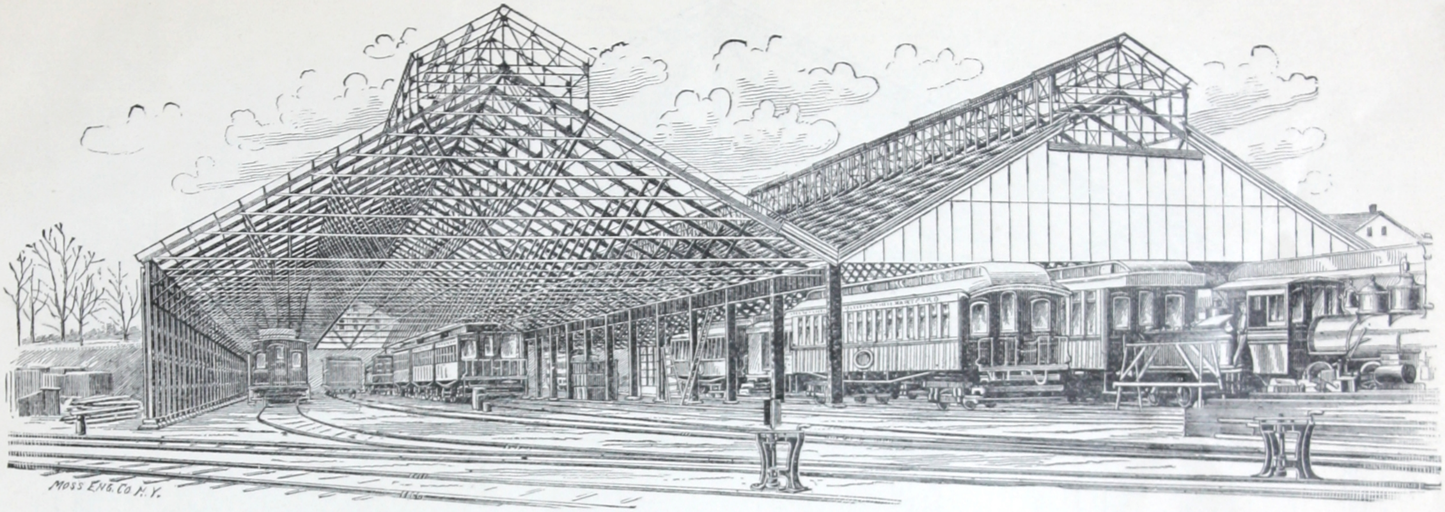
Manufacturers contemplating the construction of Rolling Mills will do well to examine this roof and get our plans and estimates.



IRON BUILDING FOR THE STANLEY RULE AND LEVEL COMPANY, AT NEW BRITAIN, CONN.

THE BUSINESS of the Stanley Rule and Level Company, at New Britain, Conn., necessitates the storing of large quantities of lumber, in order to be thoroughly seasoned before being manufactured, as the superior quality of the goods manufactured by this company requires thoroughly well seasoned lumber. It is often necessary to keep this lumber on hand for some time, and the building shown was designed by us for storing lumber in such a way that it would be protected from the weather, and at the same time would allow the air free circulation around the lumber. The building is 20 feet wide from post to post, with an overhang eight feet in front on the open side, the trusses being placed 10 feet apart, and connected with angle-iron purlins, covered with corrugated iron. The rear side of the building is covered, except for a distance of 18 inches at the bottom, which is left open to allow the free circulation of the air. The building is open on the front side, so that teams can drive through into the building when necessary, and the overhang in front protects these teams while loading and unloading.

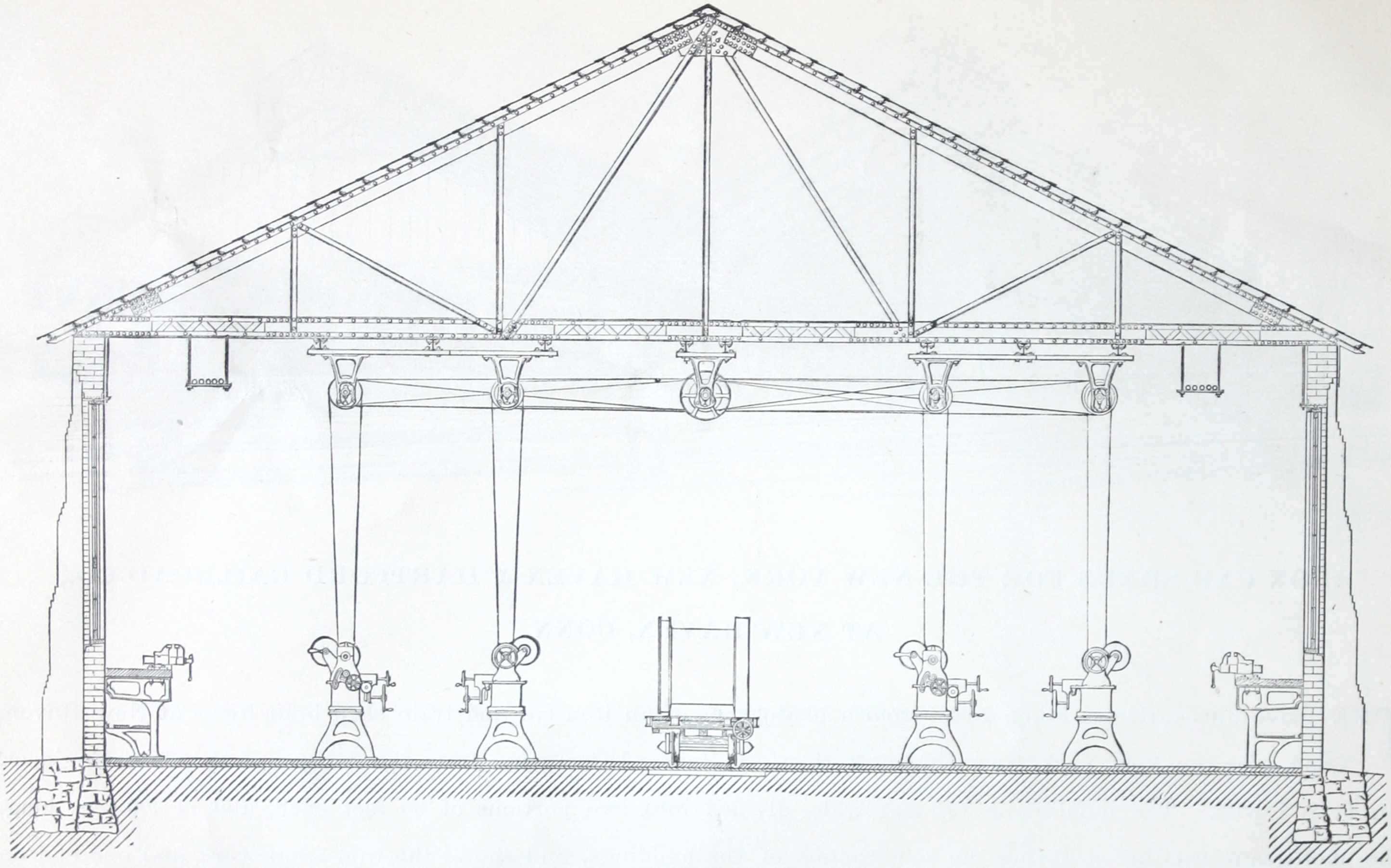
The plan commends itself particularly for storing purposes, where the material stored must be protected from the action of the elements, at the same time well ventilated and free to the action of the air. There is not a particle of woodwork about the building in any way, shape, or manner, so that the risk from fire is limited; in fact, there is no risk whatever from the building itself, as there is nothing to burn.


MOSS ENG. CO. N.Y.

IRON CAR SHEDS FOR THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD CO., AT NEW HAVEN, CONN.

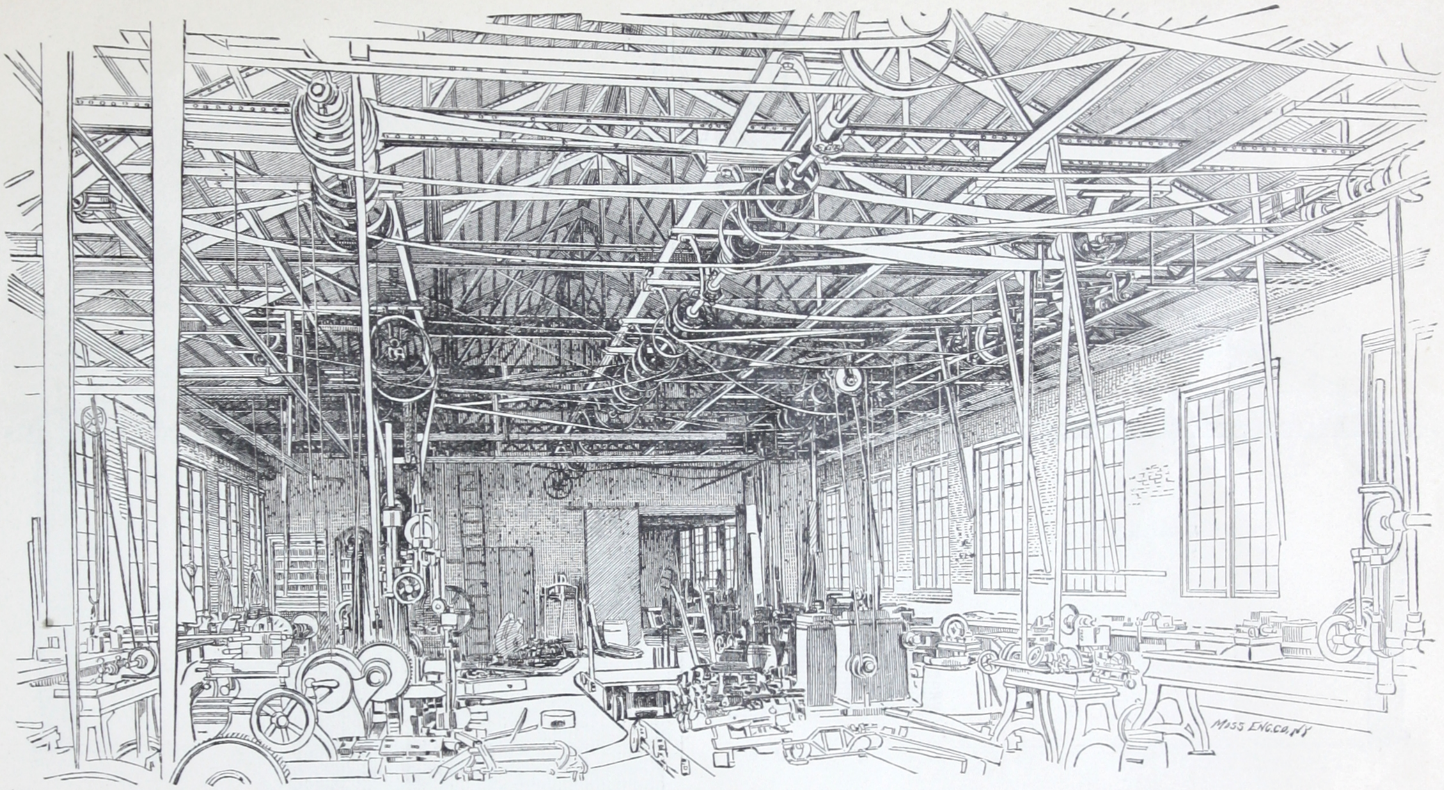
THE above illustration is taken direct from a photograph of an iron car and train shed built by us at New Haven, Conn., for the New York, New Haven & Hartford Railroad Company, from the designs of the Chief Engineer, Mr. F. S. Curtis. The building is 120 feet wide, divided into two portions of 60 feet each, and is 400 feet long. The photograph was taken during the construction of the buildings, and shows the iron framework and one end on one portion of the building as covered with corrugated iron. Both ridges of the building are provided with ventilators extending the whole length from end to end, the sides of which ventilators are provided with louvres for ventilation, and the roof is arranged with alternate panels of glass for the purpose of lighting the interior. A line of columns and girders support the trusses along the center of the building. The sides are covered entirely with iron, no openings being left, as all the light necessary is obtained from the skylights in the roof. The ends of the building are left open from the roof trusses to the ground so as to allow free and uninterrupted switching of cars in and out of the building.

The building is designed for storing cars when not in use, and forms an economical protection against the weather, and allows the employees to clean the cars without being exposed to the weather. The building is composed entirely of iron, no woodwork being used about it in any way, shape, or manner, so that the danger of fire from sparks of locomotives is reduced to a minimum.



MACHINE SHOP FOR THE C. W. HUNT COMPANY, AT WEST NEW BRIGHTON, STATEN ISLAND, N. Y.

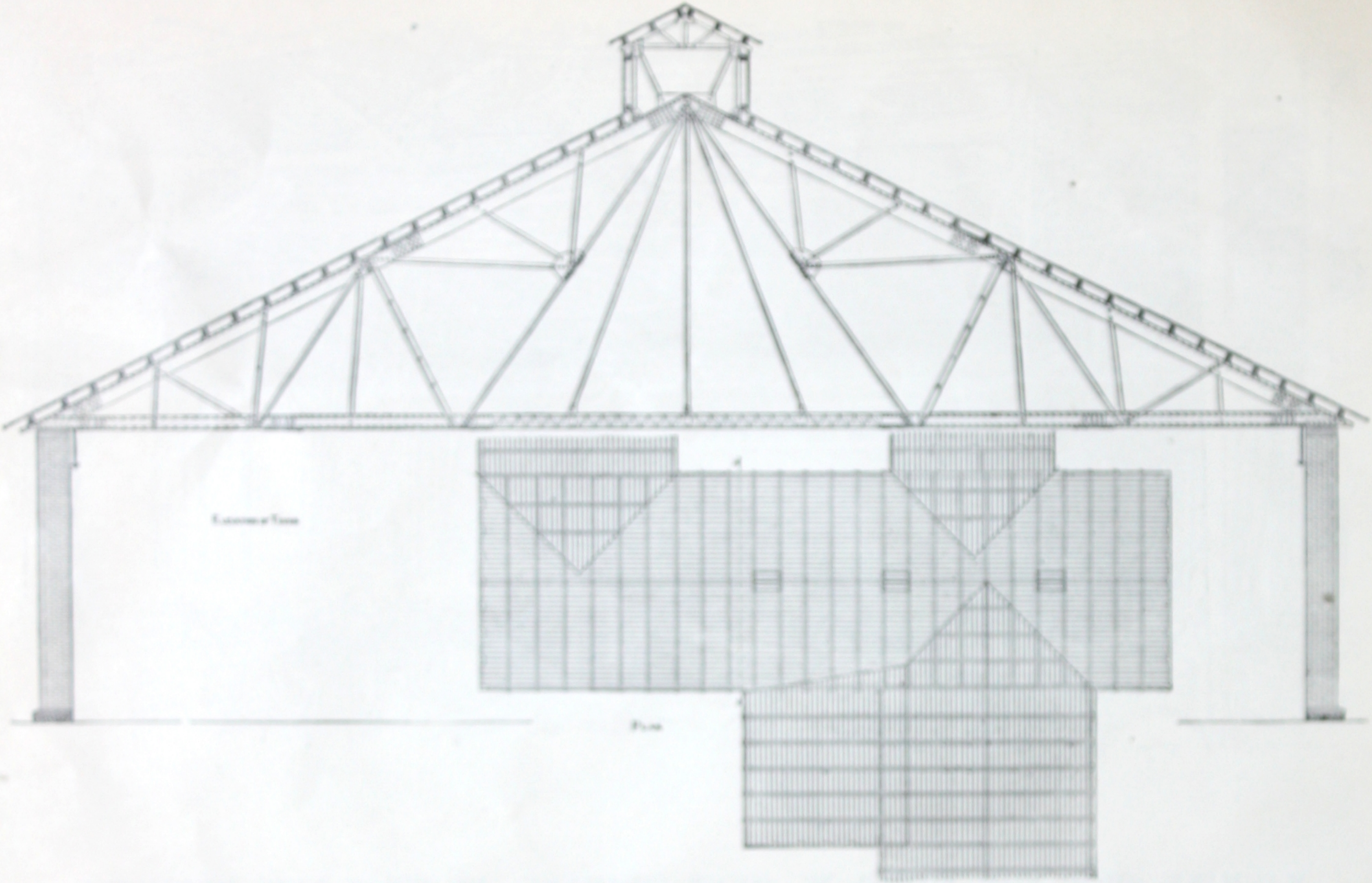
THE above illustration is taken direct from a drawing, and the illustration on the opposite page direct from a photograph of an iron roof built by us for The C. W. Hunt Company, at West New Brighton, Staten Island, N. Y. The building is 42 feet in width, by 202 feet in length, with trusses placed 10 feet apart, connected by wrought-iron purlins, and covered with slate. The roof trusses are designed to carry shafting, and through the center of the building extending the whole length is an overhead track which carries a trolley-car for moving material lengthways of the building. The shafting is attached to the underside of the trusses by means of I beams, and the trusses are arranged so that shafting can be attached at any part of the trusses throughout any portion of the building. The trusses are also designed so that the hangers for the shafting can be placed



MACHINE SHOP FOR THE C. W. HUNT COMPANY, AT WEST NEW BRIGHTON, STATEN ISLAND, N. Y.

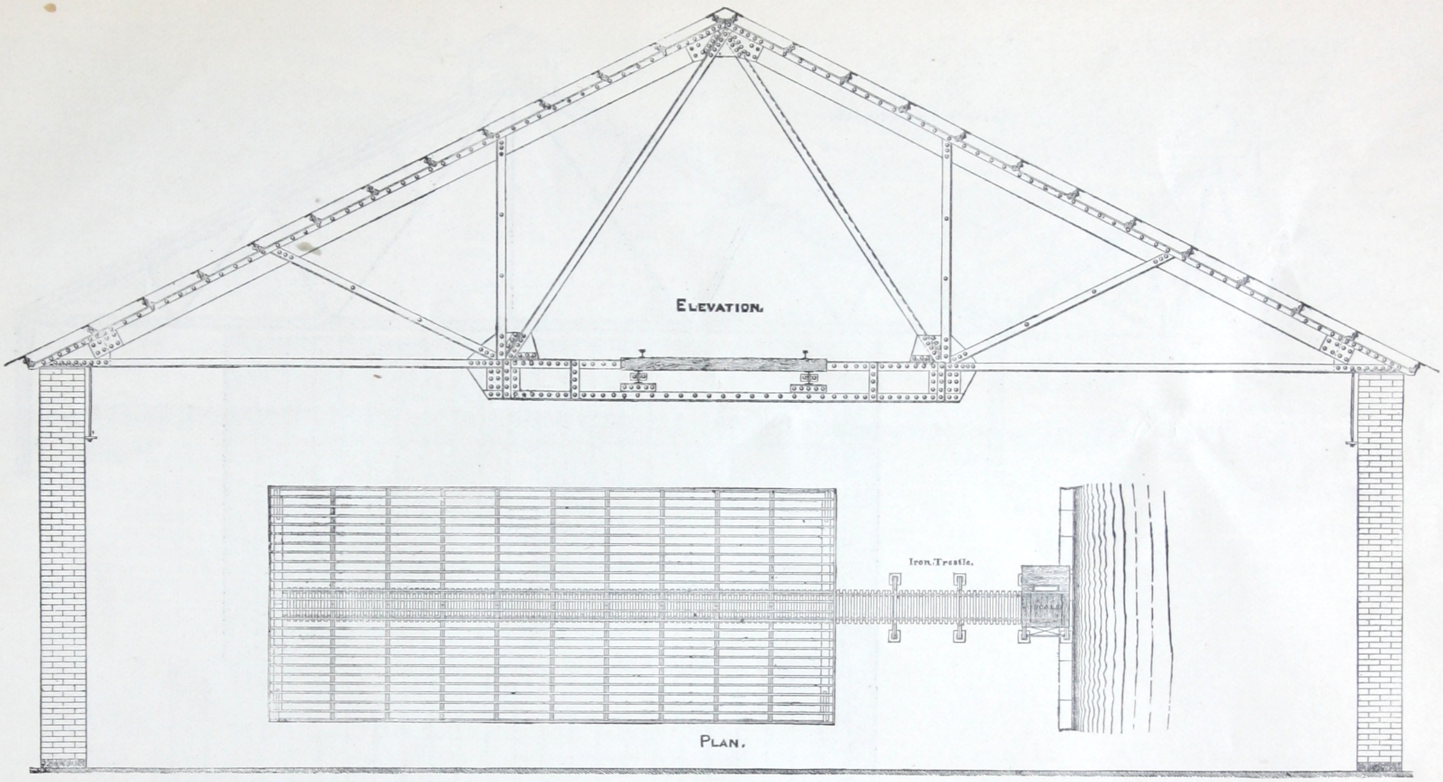
above the lower chord at any point, if desired. The side walls are of brick, and the floor of cement and concrete, no woodwork being used about the construction of the building except the window-casings. The construction is first-class in every respect, and the building is absolutely fire-proof for the reason that there is no woodwork about the construction in any part to take fire.

For Machine-shops the plan commends itself as very desirable, as the danger from fire is eliminated and the iron trusses do not swell and shrink (as in the case of wooden trusses) and throw the shafting out of line, thus causing continual annoyance and expense. When desired, the roof can be ventilated at the ridge, and in wider spans interior light can be secured by skylights in the roof.



IRON ROOF FOR THE ALUMINUM BRASS & BRONZE COMPANY, AT BRIDGEPORT, CONN.

THE above illustration is taken direct from a drawing, and represents, in a general way, the iron roof trusses, etc., built by us for The Aluminum Brass & Bronze Company, at Bridgeport, Conn. The main mill is 84 feet in width, and 267 feet in length, with a hot-mill 76 feet by 70 feet at one end, and on the opposite diagonal end a muffle-room 84 feet by 120 feet, the whole connected by girders and trusses, so that the floor space is free and and uninterrupted. The trusses are designed to carry heavy shafting, and over certain portion of the mill to carry such portions of the machinery as are necessary in moving the rolls in and out of the housings. The side walls are of brick 16 inches thick, with 24-inch pilasters under each roof-truss. The trusses are connected by wooden purlins, and covered with matched boards and silicate roof-covering.

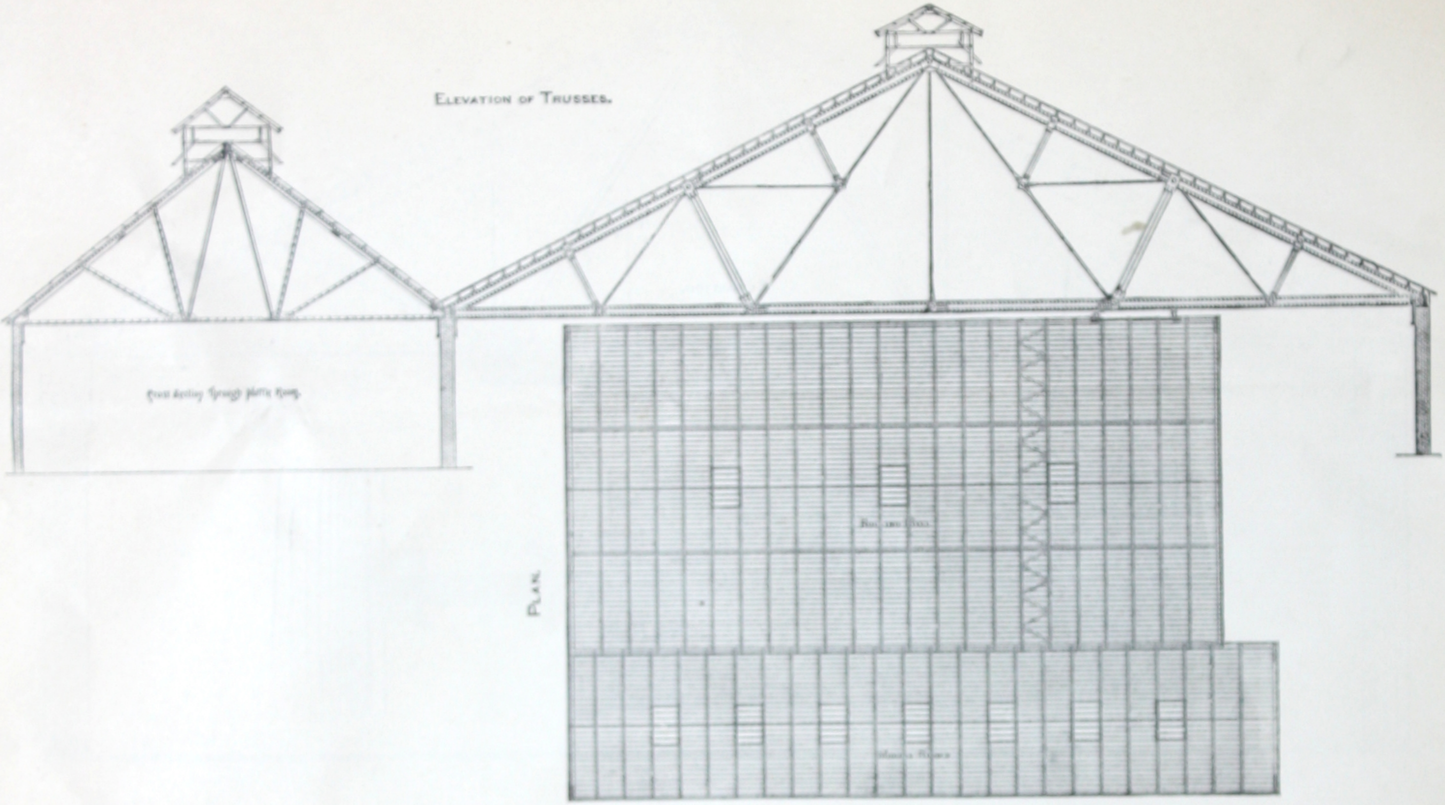


IRON ROOF AND TRESTLE FOR THE BURLINGTON CITY WATER WORKS, AT BURLINGTON, VT.

THE above illustration is taken direct from a drawing of a building built by us for the Burlington City Water-works, at Burlington, Vt., and is used for storing coal; the long and severe period of cold weather in that latitude necessitates the storing of large quantities of coal during the winter months, as navigation closes very early in the fall, and does not open until late in the spring.

The building is connected with the wharf by means of a wrought-iron trestle work, at the end of which is placed a Fairbanks Scales, so that the coal can be weighed as it is unloaded from the vessel, and before it is moved into the building. The wrought-iron trestle connecting the canal and the scales with the building being designed of sufficient strength so that cars can be moved lengthways through the building, and thus distribute the coal.

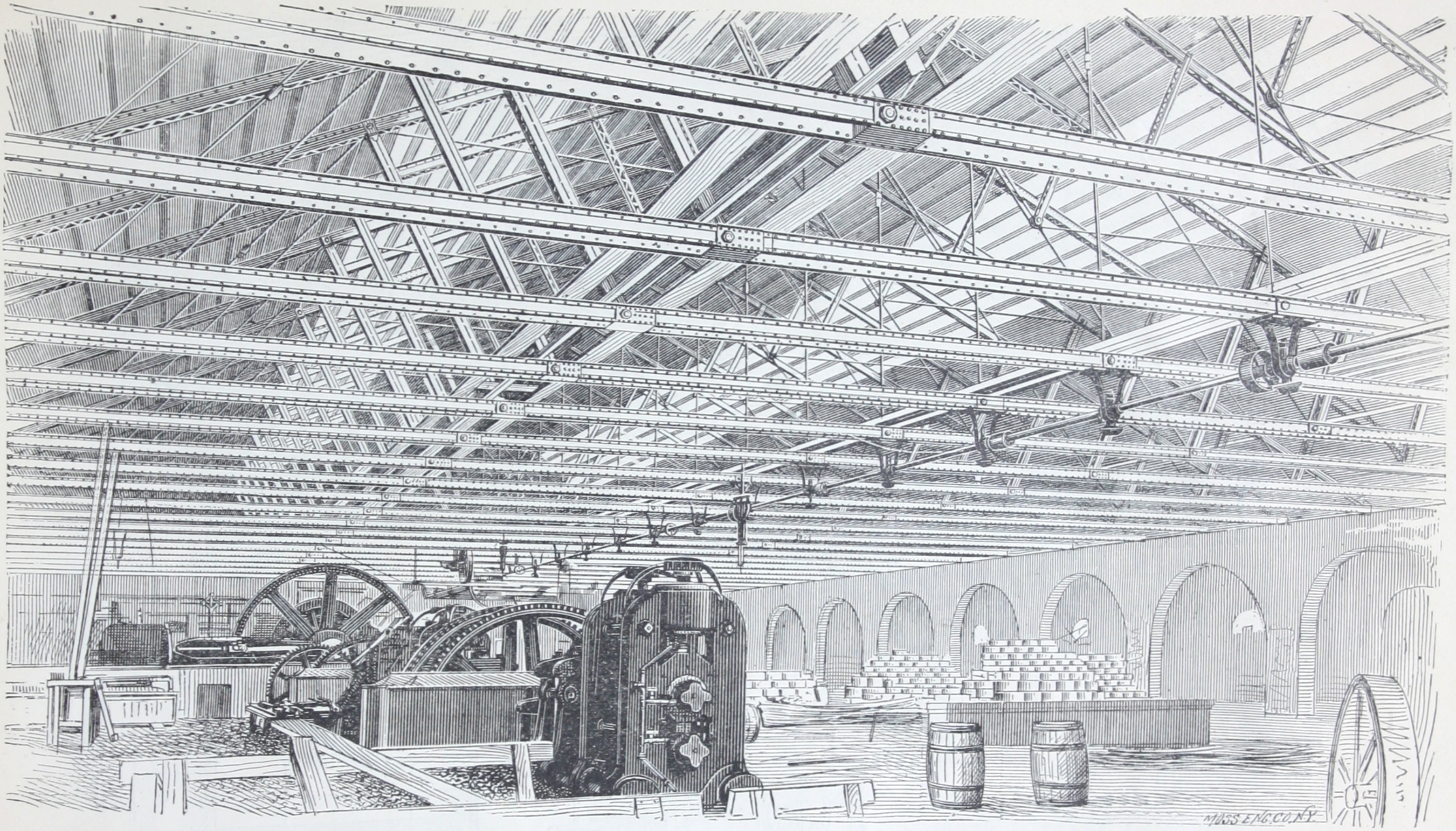
Constructed in this way the body of the building can be entirely free for storage purposes, and the passage of the cars for filling the building with coal is free and uninterrupted. The trusses are connected together with wrought-iron purlins and covered with corrugated iron, making a building absolutely fire-proof, for the reason that there is not a particle of woodwork about it except the small wooden ties to which the car-rails are spiked. The plan commends itself especially for coal-houses where large quantities are to be stored.



IRON ROOF OVER ROLLING MILL FOR THE COE BRASS MANUFACTURING COMPANY, AT TORRINGTON, CONN.

THE above cut is taken direct from a drawing, which shows in plan, and cross-section, the construction of a Rolling Mill and attached Muffle Room, built by us for The Coe Brass Manufacturing Company, at Torrington, Conn. The illustration on the opposite page is taken direct from a photograph of the main mill, after the machinery was placed and the plant was in operation. The main rolling mill is 233 feet in length, by 118 feet wide, and the muffle room is 252 feet in length, by 51 feet in width, the two connected by a 24-inch brick wall, with arched openings, as shown in the illustration on the opposite page.

The trusses for the rolling mill are designed to carry heavy shafting, and are made sufficiently strong to lift the rolls in and out of the housings, thus avoiding the necessity of using other supports than the roof trusses. For wide spans and heavy loads, iron trusses can be built fully as cheap, if not cheaper, than wooden trusses, and are much more secure and safe, besides are not continually warping and shrinking, thus throwing the shafting out of line, and increasing the expense of operation and repairs. The main mill is lighted by a skylight placed on each side of the roof, and affords


MOSS ENG. CO. N.Y.

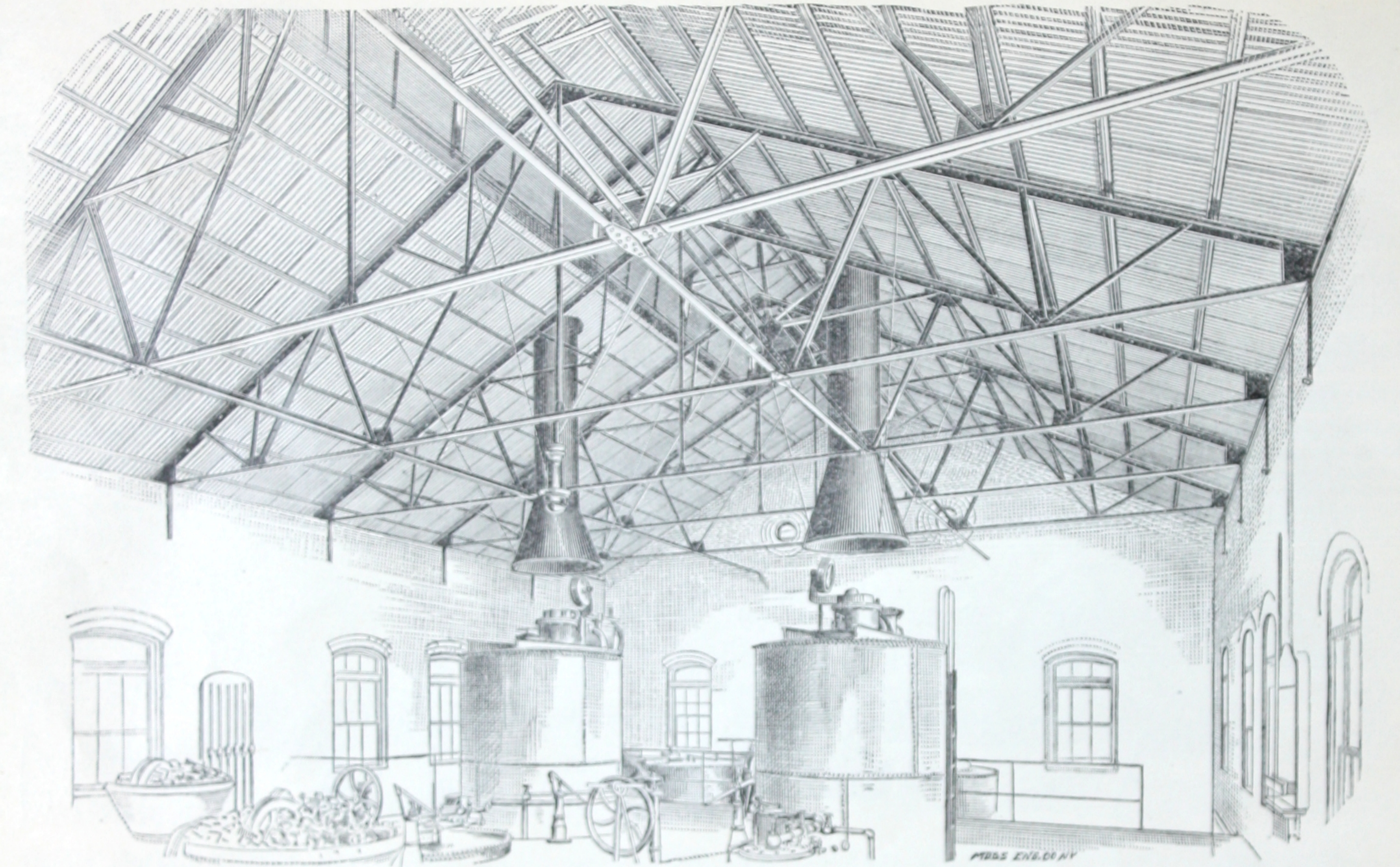
IRON ROOF OVER ROLLING MILL FOR THE COE BRASS MANUFACTURING COMPANY, AT TORRINGTON, CONN.

ample and well-distributed light throughout the whole building. The trusses of the main mill are connected by wooden purlins, covered with planed and matched boards and slate.

The roof over the muffle room is made entirely of iron; iron trusses, iron purlins, and covered with corrugated iron, and surmounted by ventilators placed every 30 feet, with shutters on each of the four sides, opened and closed by cords from the floor. The muffle room is made of extraordinary pitch on account of ventilation, and is found to work very satisfactorily in carrying off the large amount of smoke and gas which belches forth from the muffles when the doors are raised to allow material to be inserted or withdrawn.

The two portions of the building being separated by a brick wall, and no woodwork being used about the muffle room in any portion, there is nothing about the building to catch fire; and thus the insurance rates are decreased in a very marked degree.

We are now building for the same Company — The Coe Brass Manufacturing Company — a Tube Mill after this same plan.

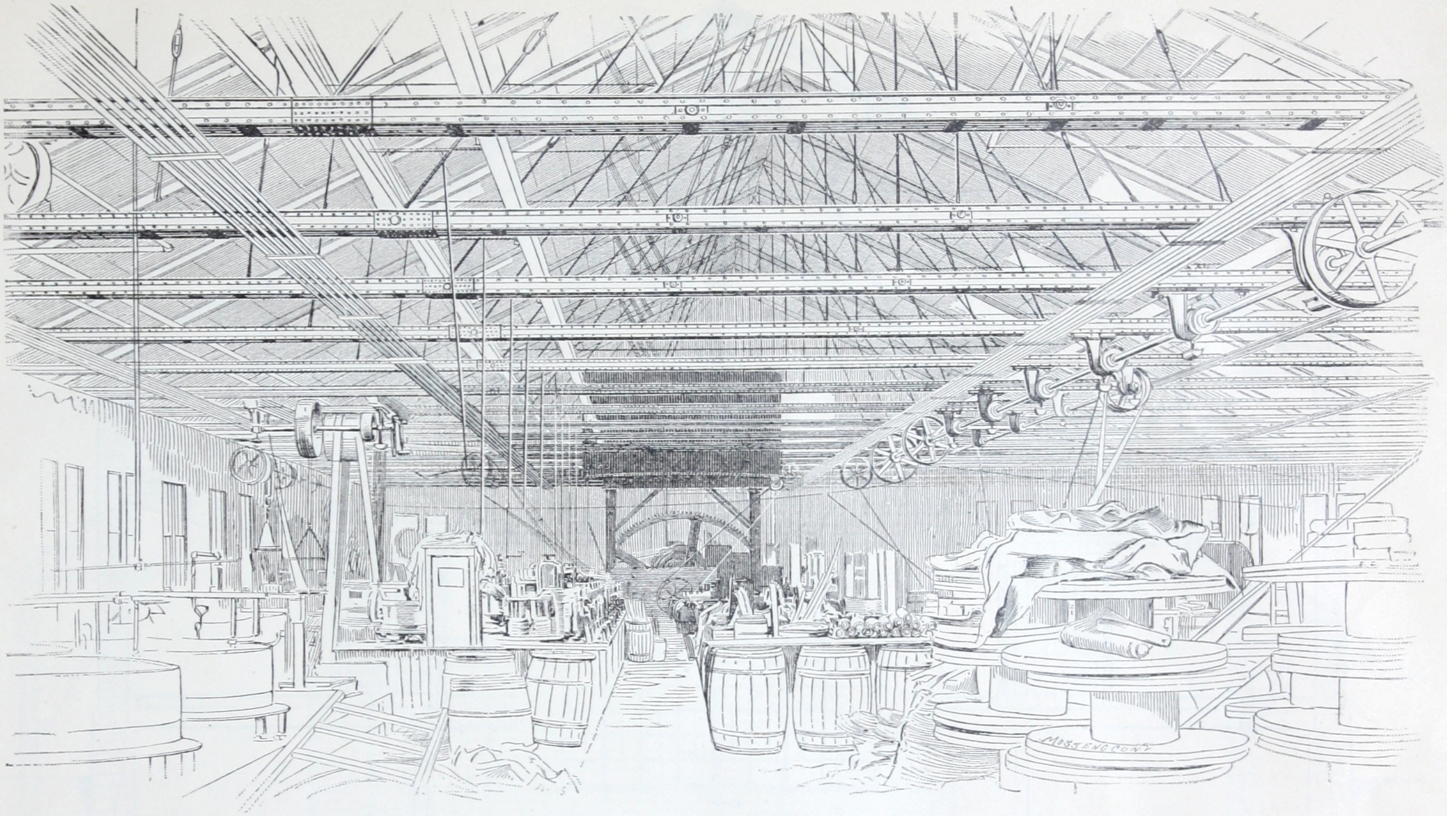


IRON ROOF OVER THE GAS-HOUSE OF THE PROVIDENCE GAS-LIGHT COMPANY,

AT PROVIDENCE, R. I.

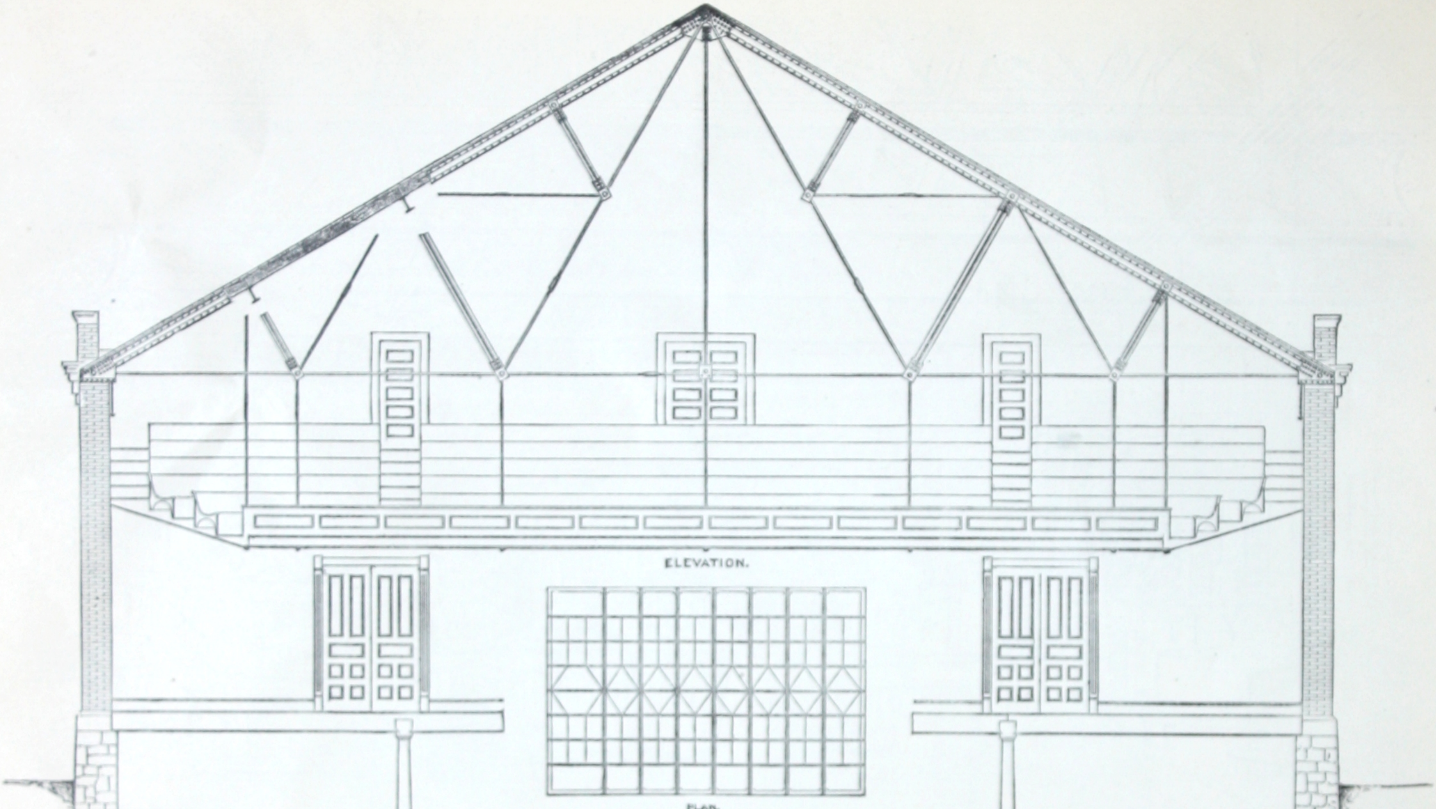
THE above illustration is taken direct from a photograph, showing the interior arrangement and construction of an iron roof built by us for the Providence Gas Company, at Providence, R. I. The building is 100 feet long by 40 feet in width, and is divided into two parts by a fire-proof wall extending from the foundation to the ridge — one portion of the building being 63 feet in length, and the other portion 34 feet in length. The roof is constructed entirely of iron,— iron trusses, iron purlins, and corrugated iron covering. The ridge is capped with a ventilator, with side openings controlled by cords from the floor, so that, no matter which way the wind blows, ample and perfect ventilation is provided.

For gas works, where the danger from fire over the furnaces and retorts is extreme, the plan commends itself. We are also using a similar construction for the new gas-house of The Putnam Light and Power Company, at Putnam, Conn. We also built a roof of similar construction for the North Liberties Gas Company, at Philadelphia, Pa., except in the latter case the roof was covered with slate instead of corrugated iron. We invite the officials of gas companies to visit these buildings and note the construction.



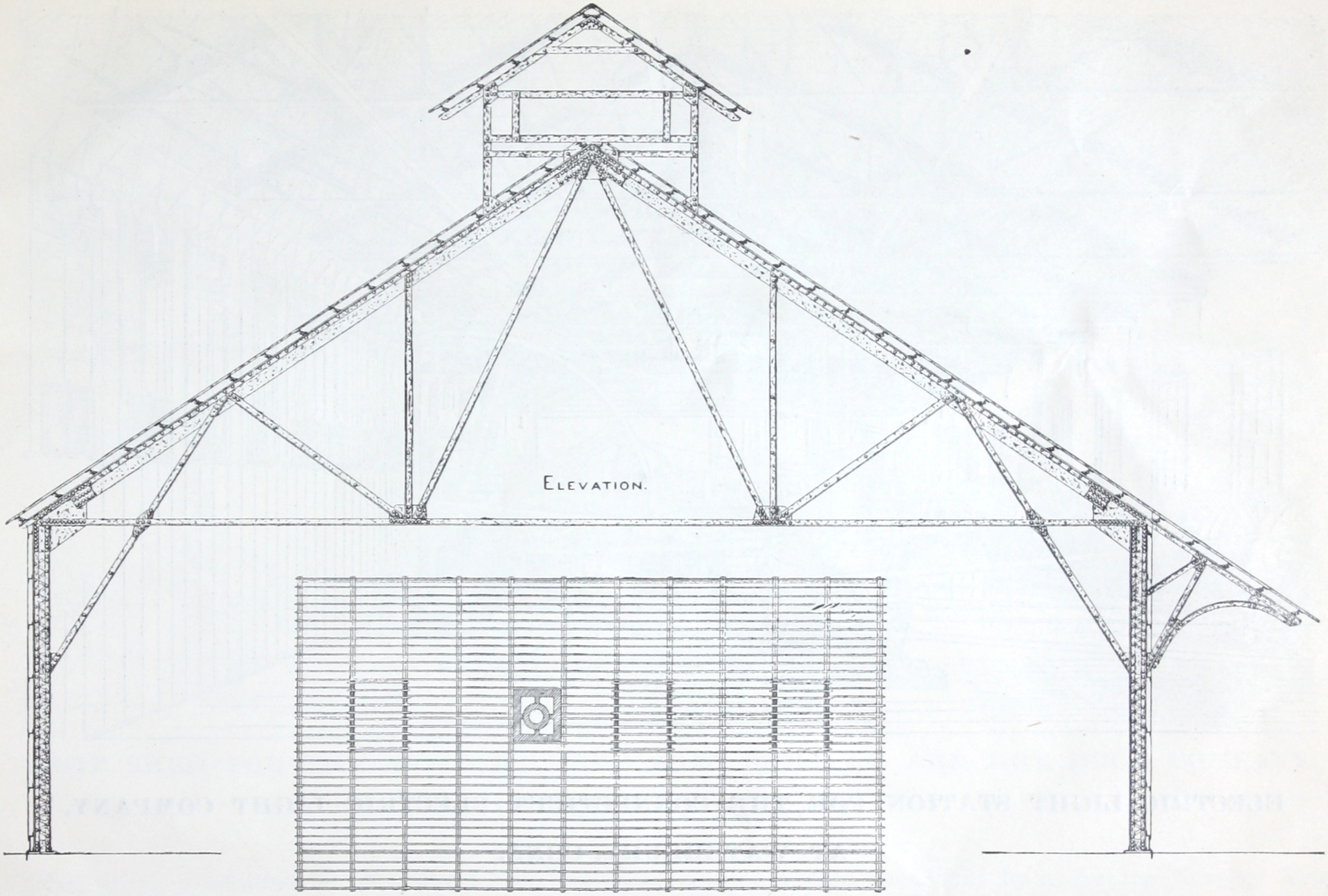
ROLLING MILL ROOF FOR THE SEYMOUR MANUFACTURING COMPANY, AT SEYMOUR, CONN.

THE above illustration is taken direct from a photograph of an iron roof built by us for The Seymour Manufacturing Company, at Seymour, Conn., over their rolling-mill and muffles. The old works of the company were almost entirely destroyed by fire, and in the construction of the new works they desired to eliminate, as much as possible, the combustible, so the plans illustrated above were adopted. The building is 200 feet long, and 160 feet in width,—the width being divided into two portions of 80 feet each, the central support being made of plate girders, resting on columns. These columns are constructed of boiler-iron, filled with concrete, securely bolted to the foundations and capped with heavy plates, the smooth exterior surface preventing injury by carts or trucks running against them, and at the same time, in case of fire from wood or other material stored in the building, the columns could not be injured. Over certain portions of the building the trusses are made heavy enough to carry rolls and other machinery so that they can be moved about quickly and economically. The building is thoroughly ventilated by means of iron ventilators, with wrought-iron louvres opening and closing by cords from the floor. The trusses are placed 10 feet apart so that the shafting can be secured direct to the lower chord, and are connected by iron purlins, with roof-boards and metal covering, which, with brick side-walls, renders the building practically fire-proof.



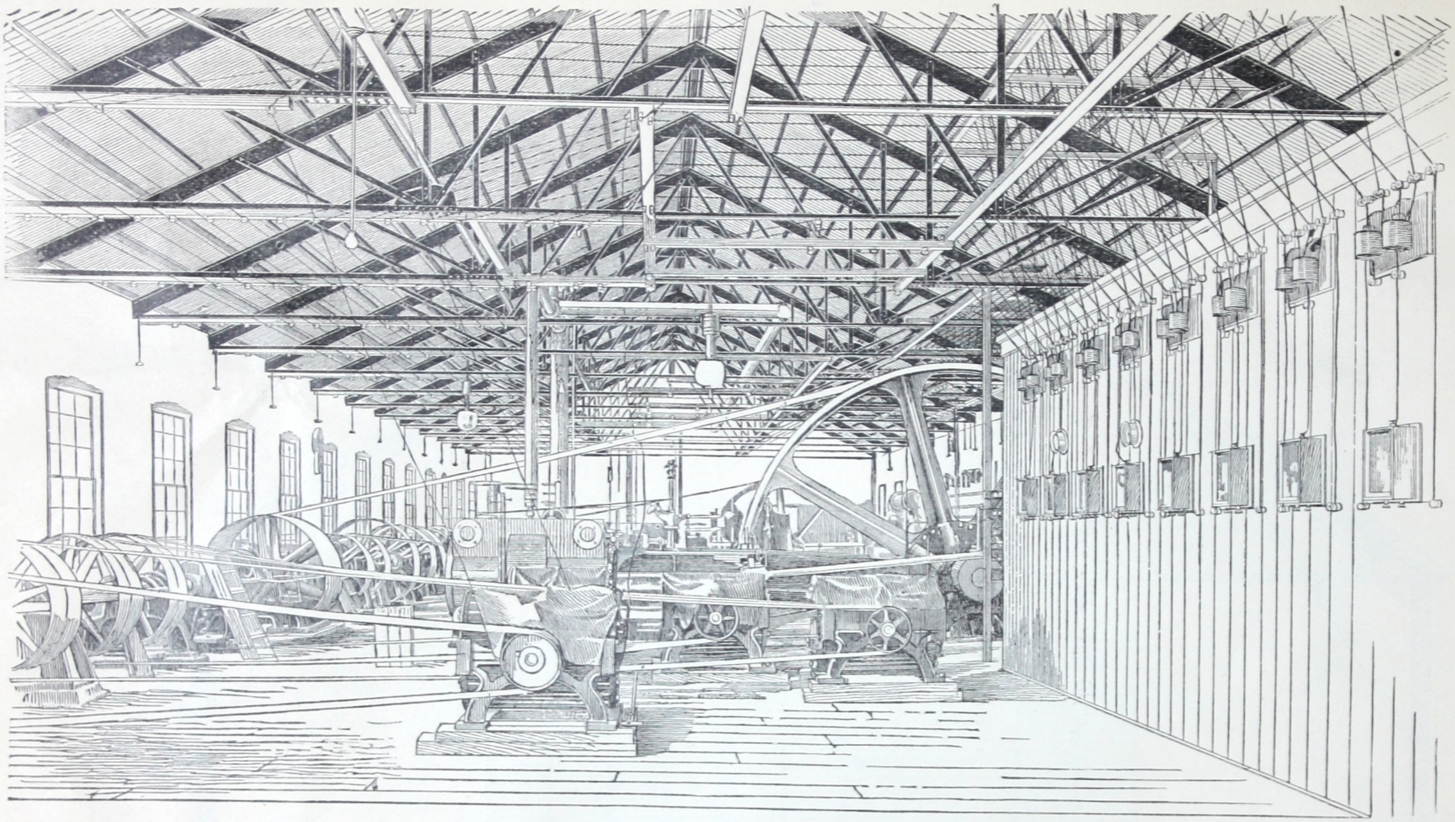
IRON ROOF TRUSSES OVER THE FOOT GUARD ARMORY, AT HARTFORD, CONN.

THE above illustration is taken direct from a drawing of an iron roof built by us for the Foot Guard Armory, at Hartford, Conn., from the designs of the late John C. Mead, architect, Hartford, Conn. The building is 77 feet in width, and the drill room is 114 feet long, clear and uninterrupted, so as to allow for the evolution of a large body of troops. In order to have the floor clear and uninterrupted, and at the same time allow for seats for spectators, the galleries, which extend around both sides and one end of the building, are supported from the roof trusses. The trusses are placed 14 feet apart, and at each panel point connecting the trusses, is placed a wrought-iron purlin, with jack rafters, roof boards, and slate covering. Where it is desirable to place the roof trusses more than 10 feet apart, this construction is very desirable, and can be carried to the extreme of placing the trusses 30 feet or 40 feet apart; the size of the purlins being increased to correspond. The construction also commends itself where gallery floors are to be supported, at the same time without impeding the sight and light by columns or posts in the body of the building. This building has also a stage, and is used for entertainments, etc., so that the view from the side seats is not impeded or interrupted by posts and columns. The small plan in the center of the illustration shows the general construction and bracing of the trusses and purlins.



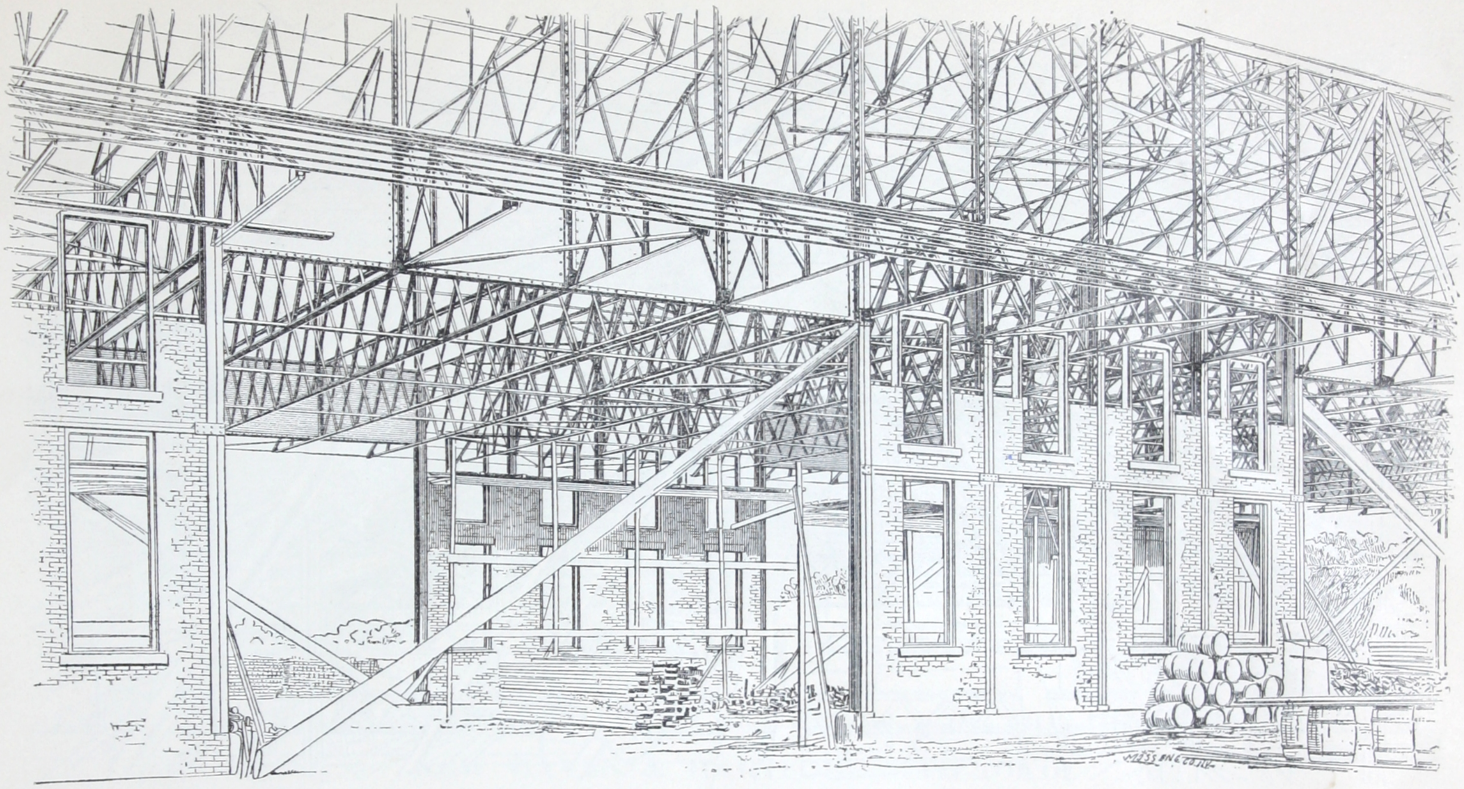
IRON CASTING SHOP FOR THE WATERBURY BRASS COMPANY, AT WATERBURY, CONN.

THE above illustration, taken direct from a drawing, shows, in plan and cross section, the construction of an iron casting shop, built by us for the Waterbury Brass Company, at Waterbury, Conn. The building is constructed entirely of iron, both the roof and the sides, and is 110 feet in length by 52 feet in width between the walls. The overhang shown in the illustration extends the full length of one side of the building, and is used for storing material, both raw and finished, at the same time protecting it from the weather and leaving it easy of access. The building is provided with large double doors at the sides, so that teams can drive through to bring in the raw material and carry out the finished product. The building is thoroughly ventilated, the pitch of the roof being sufficient to take off the obnoxious gases which prevail in brass casting shops. The plan commends itself for foundries where light castings are made, either in brass or iron.



ELECTRIC LIGHT STATION FOR THE CONNECTICUT ELECTRIC LIGHT COMPANY, AT WATERBURY, CONN.

THE above illustration is taken direct from a photograph of an Electric Light Station built by us for the Connecticut Electric Light Company, at Waterbury, Conn., from the designs of Mr. R. W. Hill, Architect. The building is 51 feet in width, by 251 feet in length, the boiler room and the dynamo room being separated by a brick wall, the former being 69 feet in length, and the latter being 183 feet in length. The roof-trusses are of iron, with iron purlins, and corrugated iron covering, and the floors are made of concrete and asphalt, so that there is not a particle of woodwork about the building to catch fire, which is so liable to occur in electric-light stations. The shafting is secured directly to the floor, as the roof-trusses were not designed to carry any shafting, but simply to support the roof-covering together with the wind and snow load. The side walls are of brick, so that the construction is absolutely fire-proof. This structure commends itself to electric light companies as being economical, and at the same time the risk from fire is entirely eliminated.

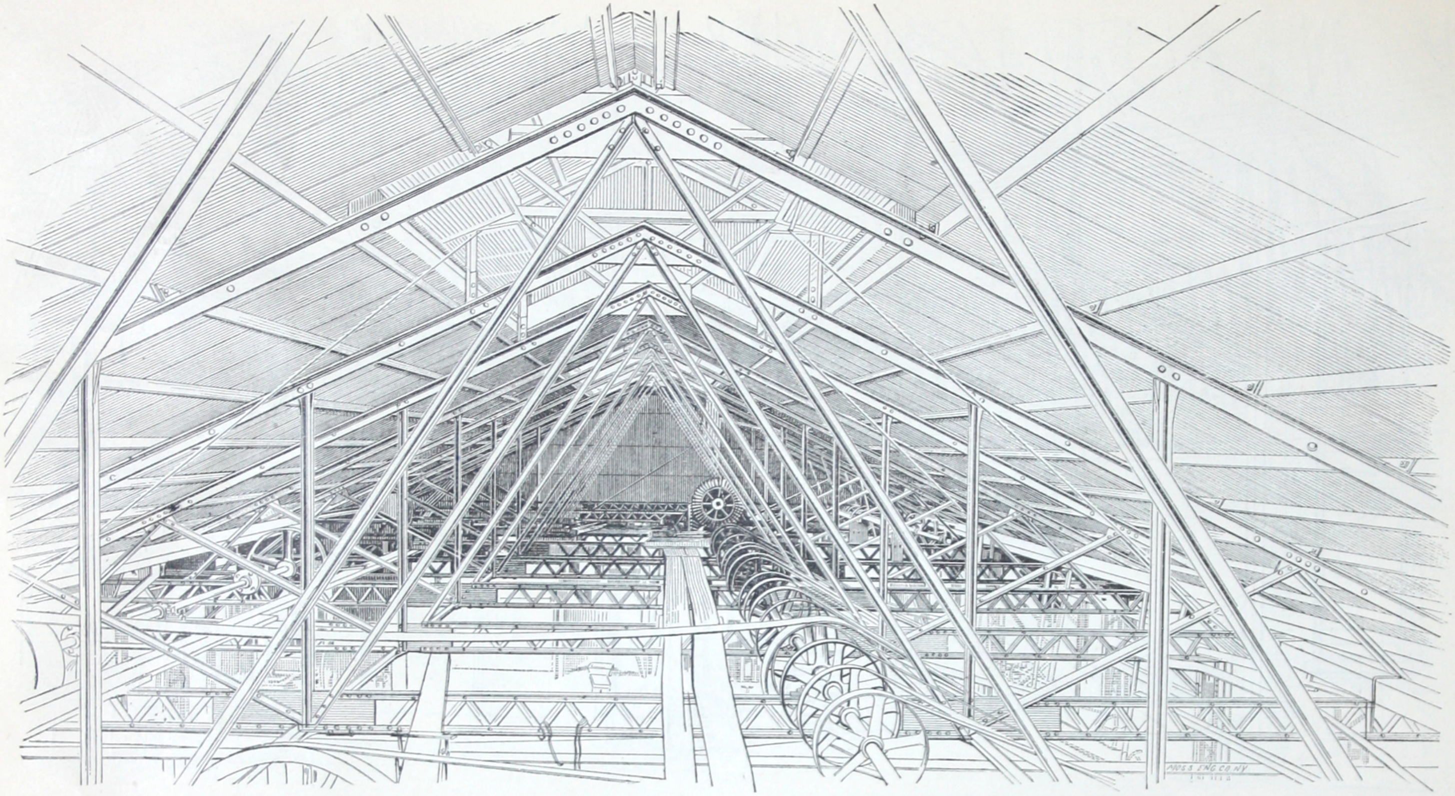


SHIP SHED FOR THE NEWPORT NEWS SHIP BUILDING AND DRY DOCK COMPANY, AT NEWPORT NEWS, VA.

THE above illustration is taken direct from the photograph of a Ship Shed built by us for the Newport News Ship Building and Dry Dock Company, at Newport News, Va. The building is 60 feet in width by 320 feet in length, and two stories high, the lower portion being used for such machinery as is used for the construction of the hulls of ships,—the upper portion being used as a mold-loft for laying out the contour lines.

The photograph was taken during the construction of the building, and shows the wide openings placed every 30 feet, allowing teams to drive in and out to take in the raw material, and bring out the finished product. The trusses are placed 10 feet apart, supported on iron posts; and in order to protect the building from the weather the space between the posts is filled with a light 12-inch brick wall for the lower floor, and an 8-inch brick wall for the upper floor.

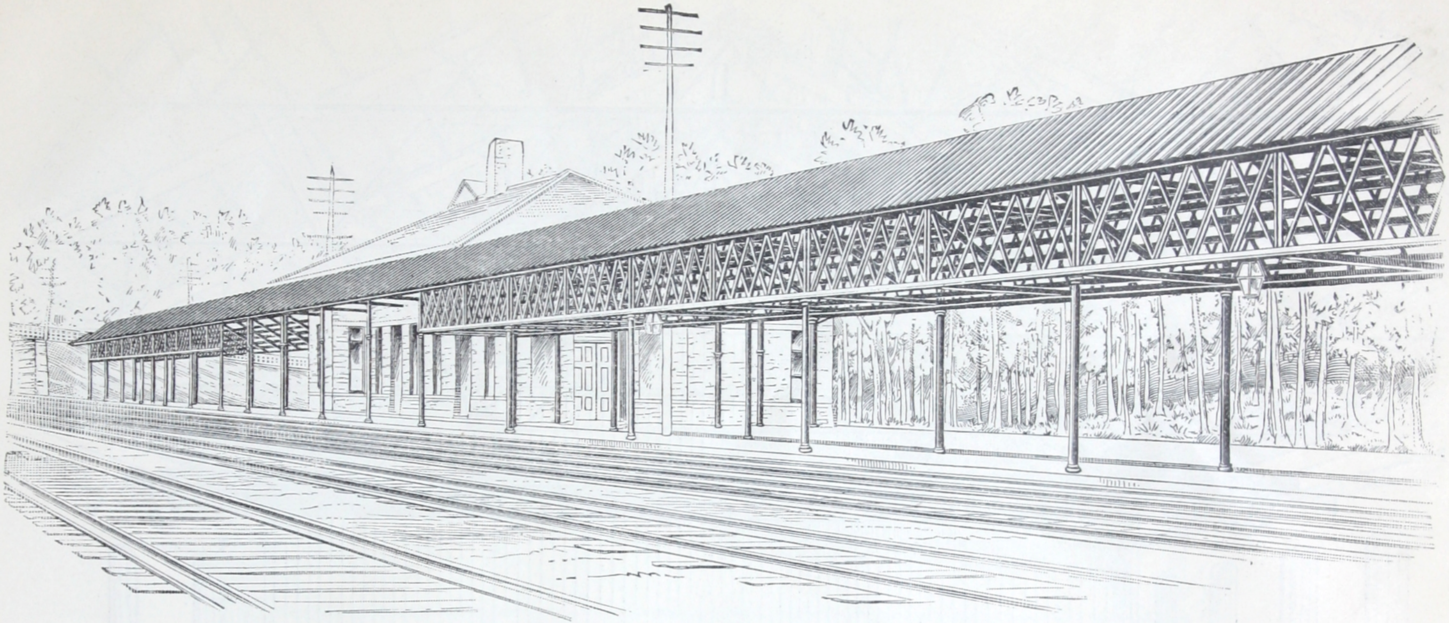
This plan commends itself where good foundations are hard to find, as it is only necessary to have the foundations in clusters from 10 to 20 feet apart, the intervening wall being supported by girders. Outside, there is an overhang extending the entire length and width of the building, this overhang being 12 feet in width, thus affording outside protection for raw material and finished product, besides a valuable addition to the floor-space of the building.



IRON FORGE SHOP BUILT FOR THE FRANKLIN MOORE COMPANY, AT WINSTED, CONN.

THE above illustration is taken direct from a photograph of an iron building, built by us for The Franklin Moore Company, at Winsted, Conn. The building is 100 feet in length by 40 feet in width, and is composed entirely of iron, that is, the side walls being made with iron frame covered with corrugated iron. The photographer has taken in the roof-trusses so as to show the construction of the roof-trusses, which are made of iron, and designed to carry line shafting through the center of the building, to which the drop-hammers are belted, through the medium of counter-shafts. The building is composed entirely of iron ; that is, everything above the foundation is iron except the window casings. No woodwork being used in the construction of the building, the risk from fire is reduced to an absolute minimum, which is a very important element in a forge shop exposed as they are.

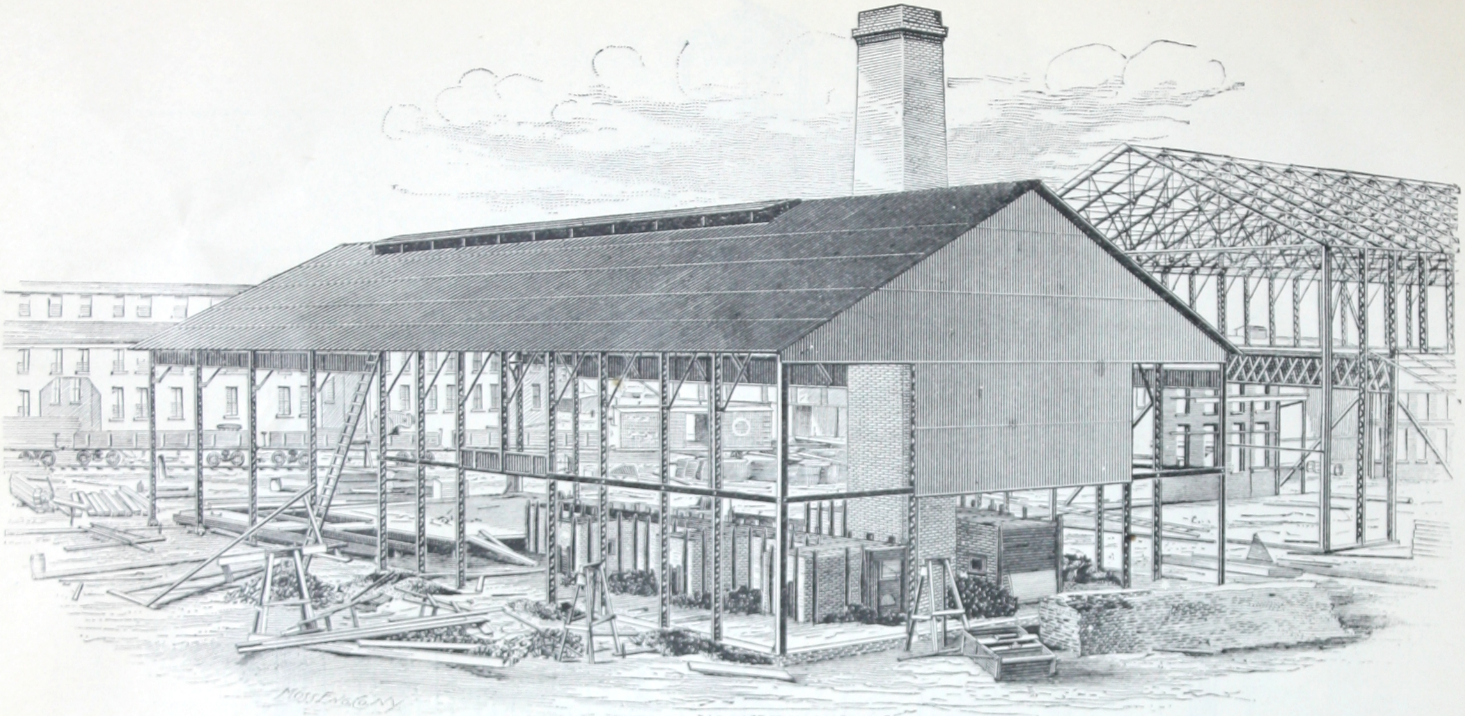
Along the ridge of the building is placed a ventilator so arranged that the openings can be controlled by cords from the floor, thus securing an ample ventilation throughout all changes of the weather. These shutters, which form the sides of the ventilators, work independent of each other, so that they can be opened and closed separately.



IRON ARCADE OR PLATFORM COVERING FOR THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD.

THE above illustration is taken direct from a photograph of an iron arcade or platform covering for the Larchmont Depot on the New York Division of the New York, New Haven & Hartford Railroad, and was designed by Mr. Charles P. Clark, the President of the Railroad Company. There is a large and growing demand for a permanent and economical platform-covering for railroad stations which will at the same time be pleasing to the eye and conform in general outline to other appointments of the station.

With this end in view the above construction was designed by Mr. Clark, and we have built in the last year, for the New York, New Haven & Hartford Railroad Company, a matter of over 2,000 lineal feet. The roof is so arranged that the portion on the outside away from the tracks forms a protection to passengers in stormy weather, so that they can drive under this while waiting for trains; and on the inside, next to the tracks, the roof projects over sufficiently to form a protection for passengers, and at the same time clear the tops of the cars. The posts are placed 25 feet apart, lengthways, and are made of wrought-iron pipe, so as to be ornamental, and at the same time strong, without being cumbersome and heavy.

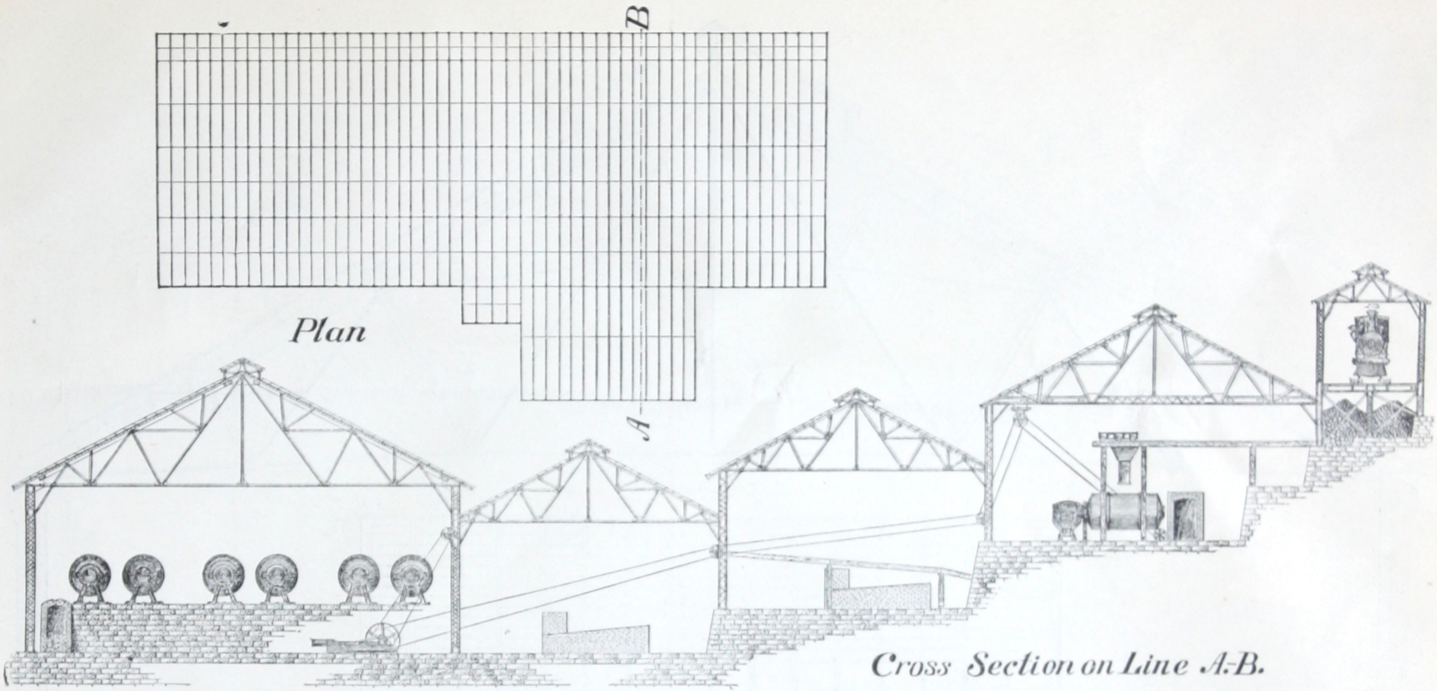


BENDING SHED OF THE NEWPORT NEWS DRY DOCK AND SHIP BUILDING COMPANY, AT NEWPORT NEWS.

THE above illustration is taken direct from a photograph of an iron building, built by us for The Newport News Ship Building and Dry Dock Company, at Newport News, Va. The building is 60 feet in width, and 130 feet in length, with a furnace located at one end, and a bending floor located at the other end. In a building of this kind the risk from fire is very great, but the building above illustrated is absolutely fire-proof, for the reason that there is not a particle of woodwork used in any way about the construction.

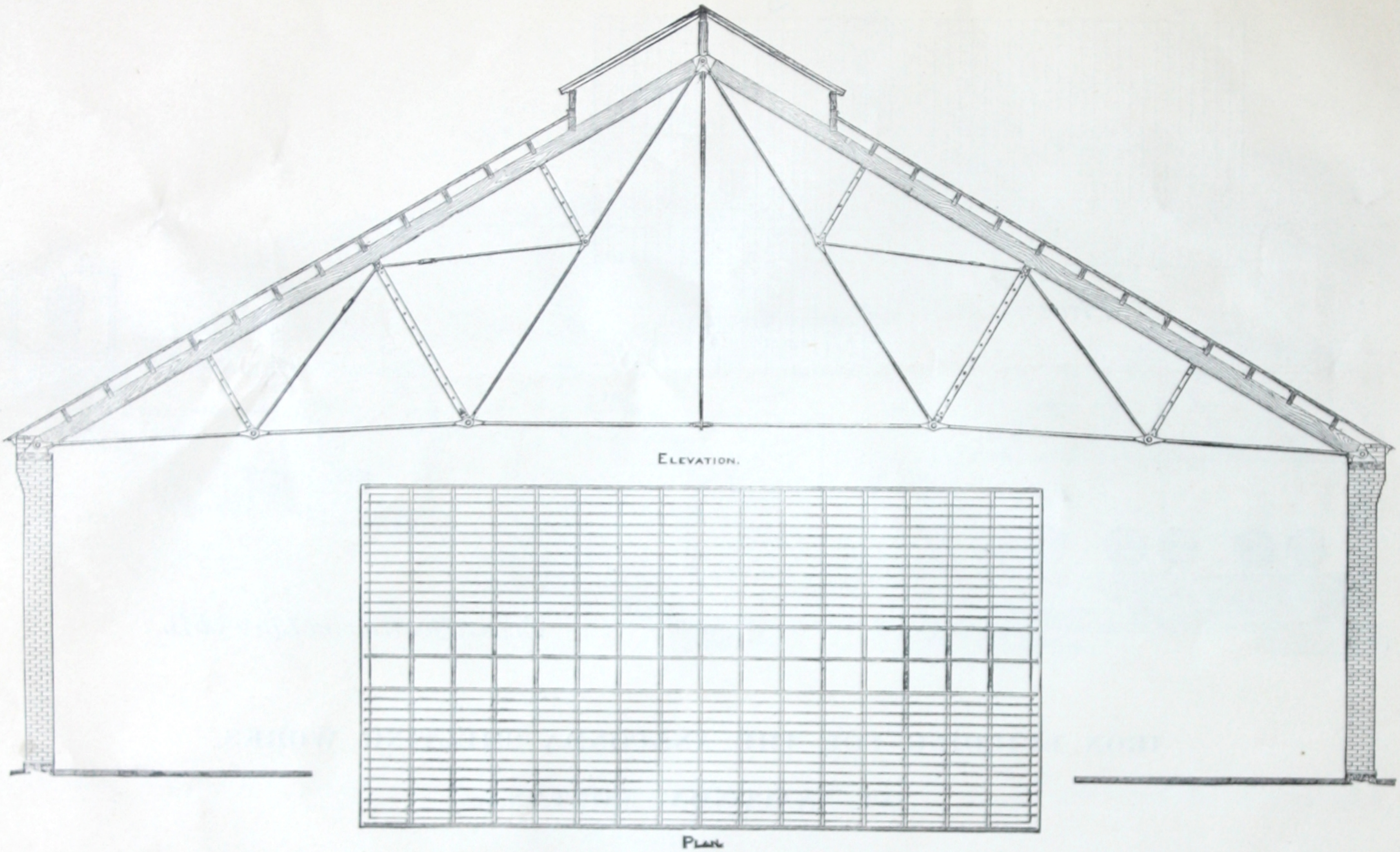
At the furnace end there is a light brick wall between the iron columns; the opposite end being left open so as to allow the material to be delivered on the floors from carts and cars.

The iron framework of the building shown on the right of the above illustration is the Ship Shed described on page 23, which we built for the same Company. The photograph was taken after the completion of the Bending Shed, and before the completion of the Ship Shed.



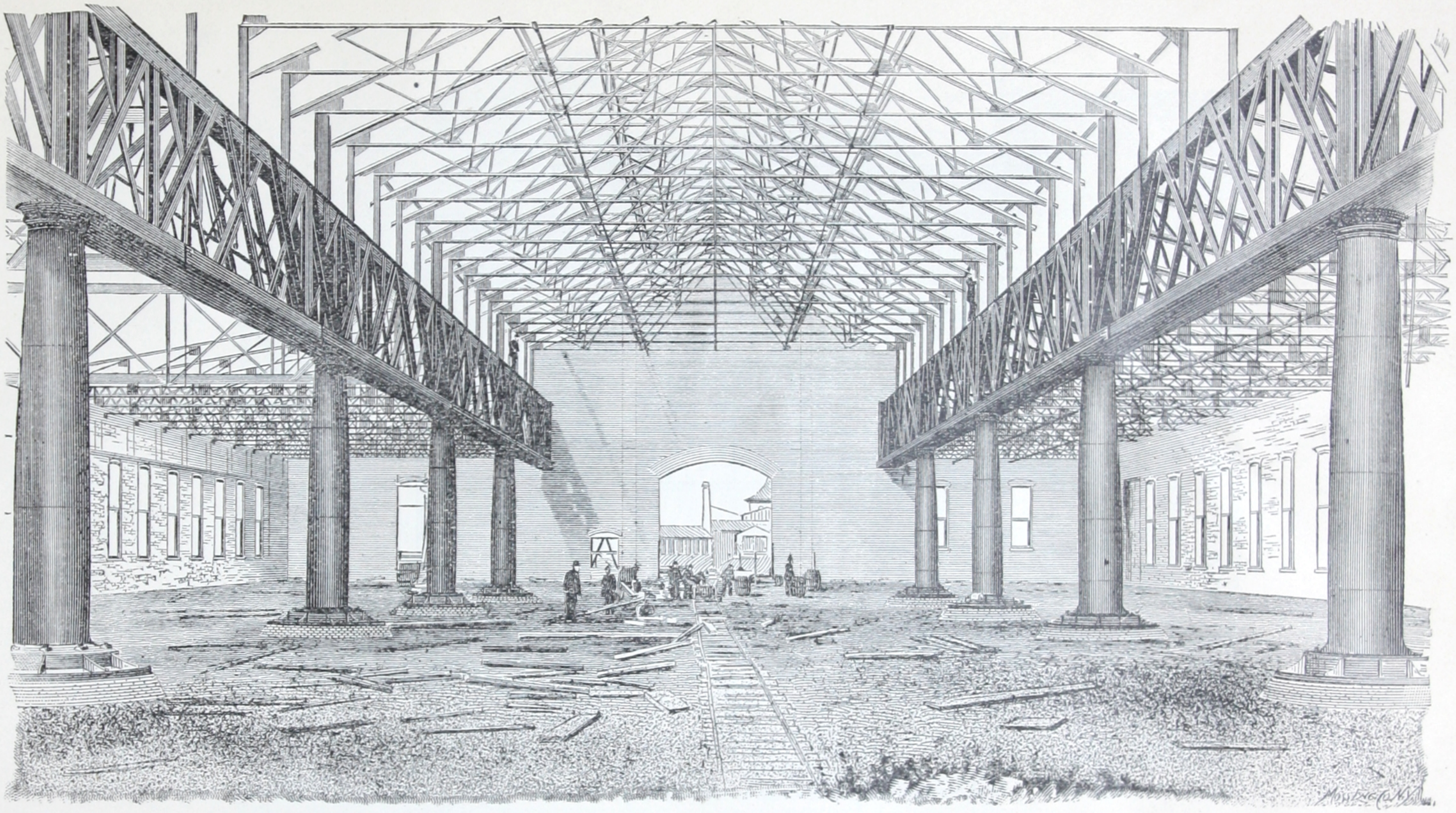
IRON BUILDING FOR THE ANACONDA SMELTING WORKS, AT ANACONDA, MONTANA.

THE above cut was taken direct from a drawing, and shows in cross section and plan the construction of a smelter building designed and built by us, for The Anaconda Smelting Works, at Anaconda, Montana. The building is one of the largest iron buildings ever constructed in this country, and replaces a wooden building which was destroyed by fire, but as this building is composed entirely of iron, not a particle of woodwork being used in its construction, it may be said that it is absolutely fire-proof. The building is 600 feet long by 300 feet wide, divided, as shown in the above cut, into several separate buildings, the whole connected together through openings between the iron posts which support the roof. The trusses are connected together by iron purlins, and the sides, ends, and roof are covered with corrugated iron.



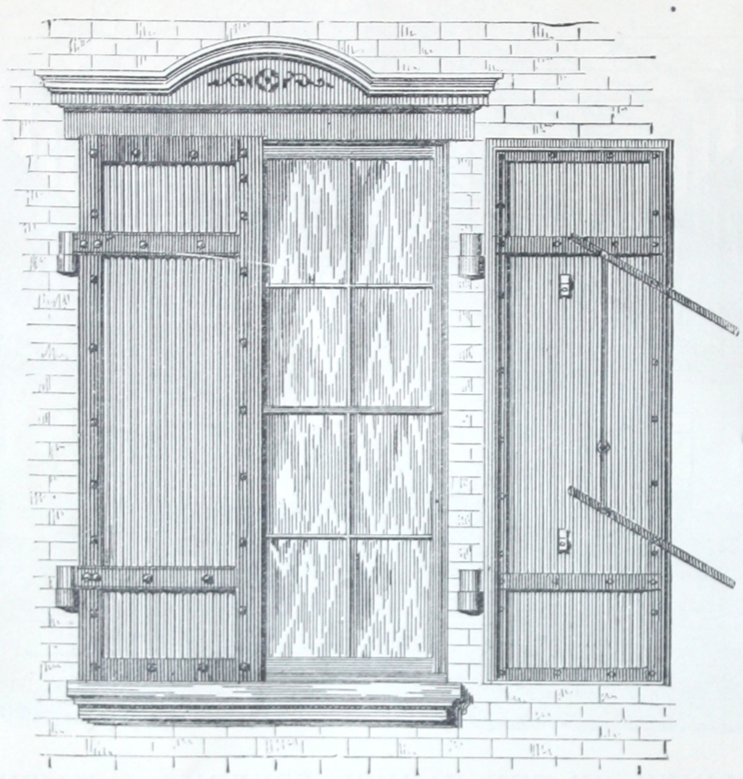
IRON FOUNDRY ROOF FOR THE RUSSELL & ERWIN MANUFACTURING COMPANY, AT NEW BRITAIN, CONN.

THE above illustration is taken direct from a drawing of a roof over the foundry of The Russell & Erwin Manufacturing Company, at New Britain, designed by T. S. Bishop, Chief Engineer of the Company. The roof is designed only to support the wind and snow loads, and is not designed for traveling or jib cranes, or any other loads. All the connections are by means of pins, and the rafter of the trusses is made of wood in order to cheapen the cost of the construction. The trusses are connected together by wooden purlins, covered with 2-inch planed and matched boards and slate. The interior of the building is lighted by means of windows in the sides, and the gables of the building are composed almost entirely of glass. Along the ridge there is also a ventilator, which gives well-diffused light throughout the interior of the building, and free and ample ventilation. For foundries where light castings are made, the plan commends itself, as trusses constructed in this way are but slightly more expensive than when made of wood, (for long spans are more economical,) besides adding much to the appearance of the interior of the structure.


Moss Eng Co N.Y.

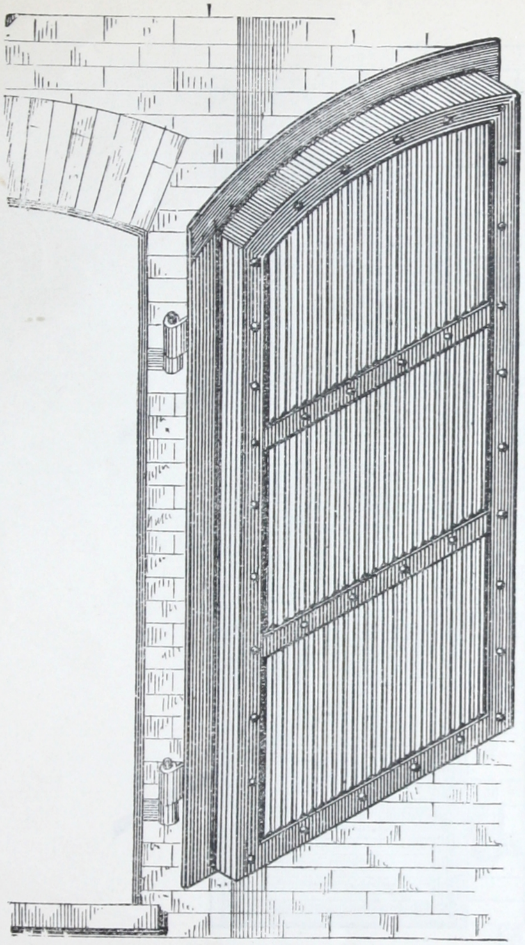
FOUNDRY BUILDING OF THE FARREL FOUNDRY & MACHINE COMPANY, AT ANSONIA, CONN.

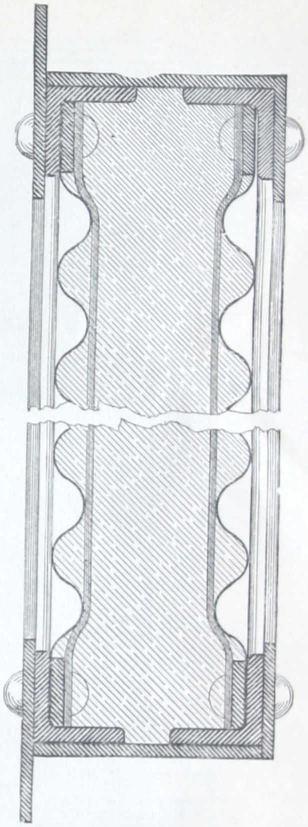
THE above illustration is taken direct from a photograph of a foundry building built by us for the Farrel Foundry & Machine Company, at Ansonia, Conn. The building is 302 feet long by 129 feet in width, and divided crossways into three parts; the central portion being 55 feet 6 inches wide center to center of columns, one wing being 30 feet 6 inches, and the other 43 feet, from center of columns to outside of walls. The central portion of the foundry is constructed for two traveling cranes having a capacity of 50 tons, or 100,000 pounds, each traveling the full length of the foundry on a heavy lattice girder, which rests directly on the heavy cast-iron columns, placed 50 feet apart. Between these columns are to be placed jib cranes of 15 tons capacity, secured to the lower flange of the longitudinal girders, which lower flange is constructed to take the strain from these jib cranes, and convey it direct to the cast-iron columns. These cast-iron columns are made with heavy flanged base, securely anchored to the foundation masonry, extending 12 feet into the ground. In this way, the strain from the cranes is carried and supported entirely by the iron work, independent of the walls of the building. The wing trusses are so arranged that a 5-ton jib crane can be set up at any point in the wings, so that the entire floor of the foundry is controlled by power. For heavy castings, this is probably one of the most complete and best equipped foundries to be found anywhere in the United States.



SINGLE THICKNESS SHUTTERS AND DOORS IN ANGLE-IRON FRAMES.

THESE are our regular, best quality shutters and doors for all ordinary outside exposures. There are many thousands of them in use, and they have never failed to prove an entire protection, though often subjected to the severest tests. They are constructed of heavy plates of corrugated iron, with heavy angle-iron frames, and thoroughly supported by heavy bands, flanges, hinges, and double latch bars.



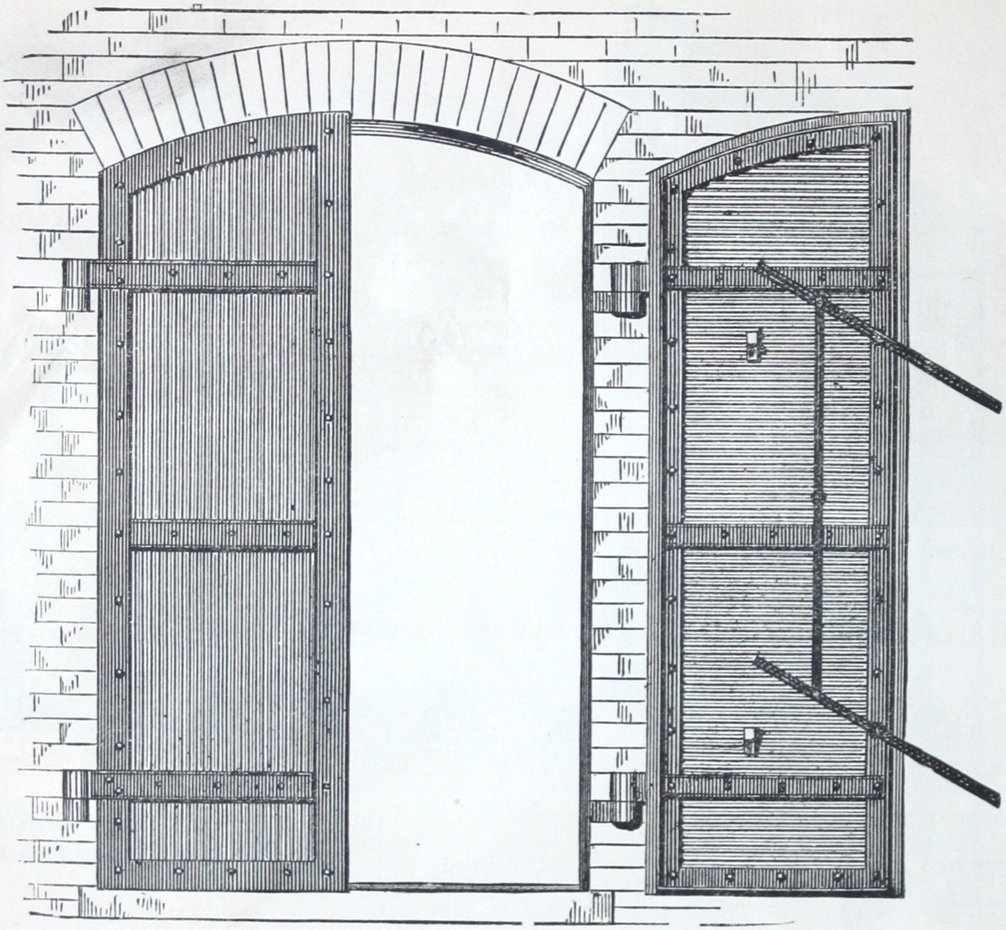


CROSS SECTION, SHOWING THE CONSTRUCTION OF OUR REGULAR FILLED BOX DOORS.

CORRUGATED IRON BOX DOORS.

THESE are constructed of two layers of heavy corrugated iron, each layer built in a heavy angle-iron frame, and the two connected by heavy bands and angles, with an air space of two inches or more between the layers, the whole strengthened by projecting flanges and cross bands, and held firmly in position by heavy hinges and double latch bars. For extraordinary exposures, as for fire walls in wooden buildings and for vault doors, we fill the space between the two layers with non-conducting material, making a fire-proof door which will resist any heat short of the melting point.

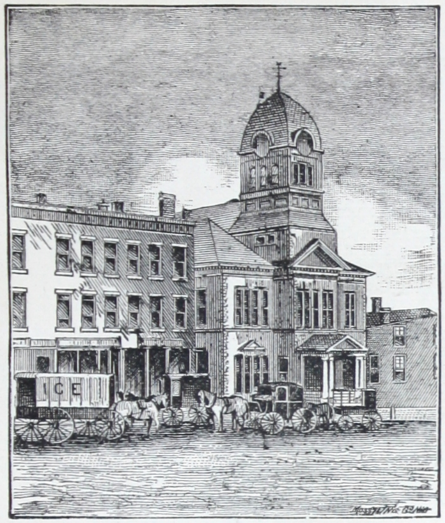
We have no hesitation in saying that these doors will stand any heat which a brick wall will stand, without warping, twisting, or allowing the fire to pass through.



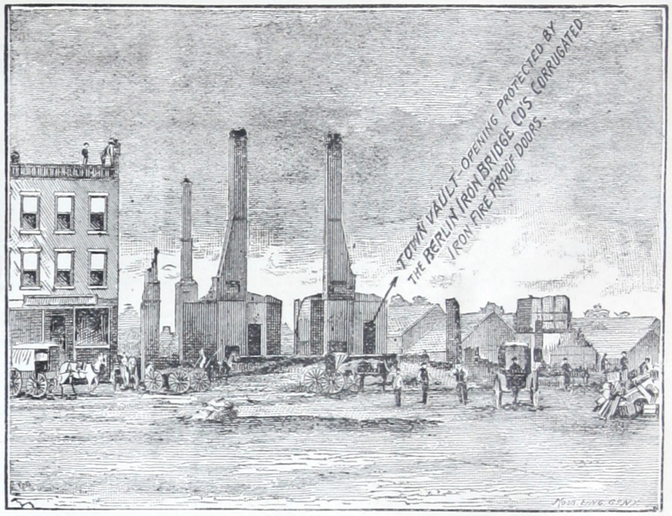
TWO-THICKNESS DOORS AND SHUTTERS.

THESE are composed of two plates of corrugated iron, the corrugations running at right angles to each other, built into a heavy angle-iron frame, thoroughly supported by flanges, bands, hinges, and latch bars, making an air space of less depth than in the box doors, but amply sufficient for ordinary exposures, and forming an entirely reliable protection, except for extra hazardous positions.

This plan is also admirably adapted for outside shutters, where the windows are very large, or are subjected to an unusual exposure.



BEFORE THE FIRE.


TOWN VAULT—OPENING PROTECTED BY
THE BERLIN IRON BRIDGE CO'S CORRUGATED
IRON FIRE PROOF DOORS.

AFTER THE FIRE.

THESE ILLUSTRATIONS WERE TAKEN DIRECT FROM PHOTOGRAPHS.

THE town of Litchfield, Conn., at an expense of several thousand dollars, lately completed a new town and county court house, which is shown in the cut above. The building was constructed entirely of wood, except in the center there was a brick vault for storing town records. The openings to this vault were protected by **corrugated iron fire-proof doors,** furnished by The Berlin Iron Bridge Company.

The view on the right shows the ruins after the fire. The letter which we received a few days after the fire, from the architect, Robert W. Hill, Esq., of Waterbury, Conn., explains how the doors protected the vault:

WATERBURY, CONN., August 17, 1888.

The Berlin Iron Bridge Company, East Berlin, Conn.:

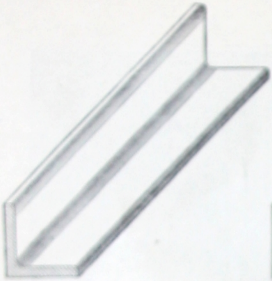
DEAR SIRS,—I have just returned from Litchfield, Conn., where I examined the ruins of the new court house. The court house has been entirely consumed by fire, and nothing is left standing but two chimneys and the two brick vaults, which were built to preserve the town and county records.

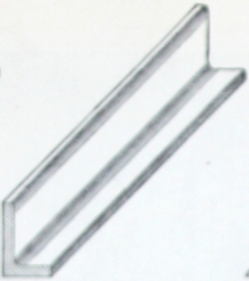
The doors on the vaults, which were furnished by your company, protected them perfectly. The vaults being new, no records had yet been placed in them, but the inside woodwork and some yellow pine shavings lying on the floor were unscorched. The outside doors are of course more or less warped and burned; but the inside vestibule doors are unharmed, the paint not being blistered; in fact, they are in as good condition as when they were put in, and will be used again, and with some repairs, the outside doors can be used again.

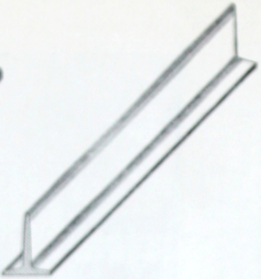
I have never seen a corrugated iron box door of any kind exposed to so severe a heat as this, and shall have no hesitation hereafter in recommending your corrugated iron doors for fire-proof vaults. I consider this a very severe test, as the building was entirely of wood, and very heavily timbered.

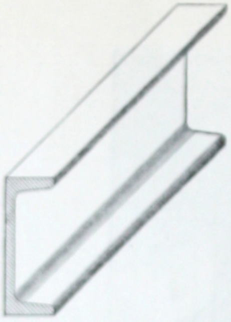
Yours very truly,

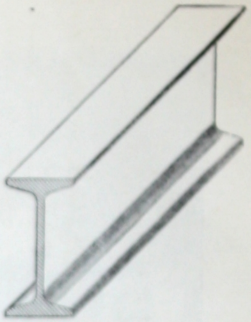
ROBERT W. HILL, *Architect.*

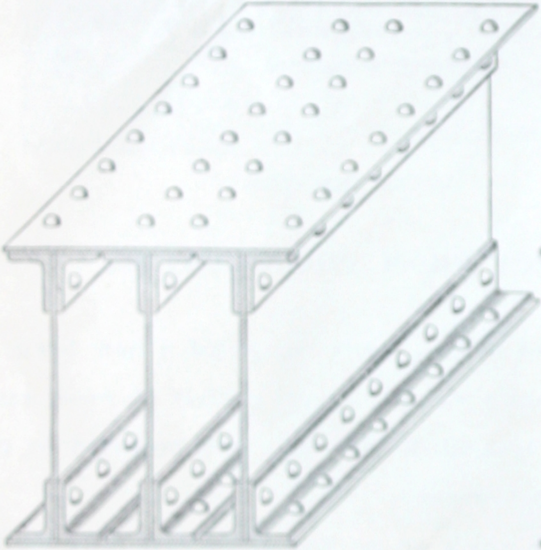

EVEN LEGGED ANGLE

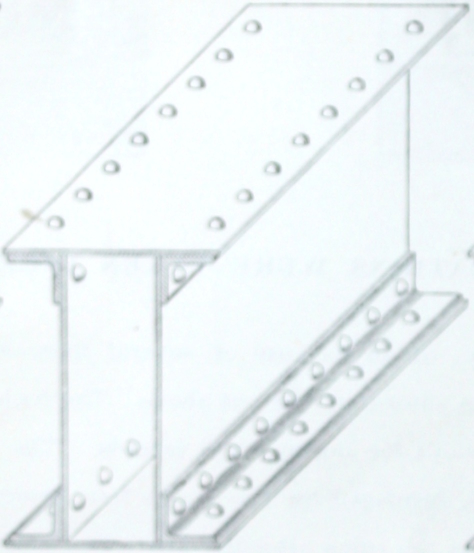

UNEVEN LEGGED ANGLE


T-BAR


CHANNEL BAR


I-BEAM


TRIPLE BOX GIRDER


BOX GIRDER

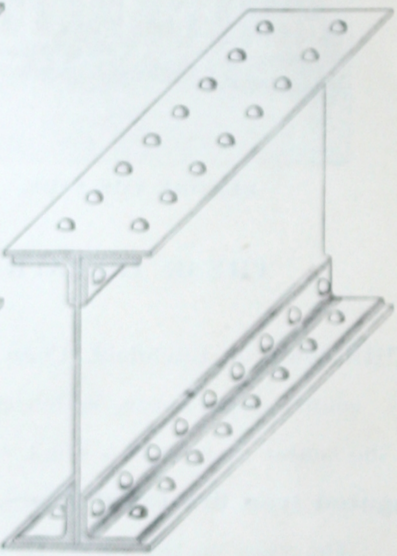
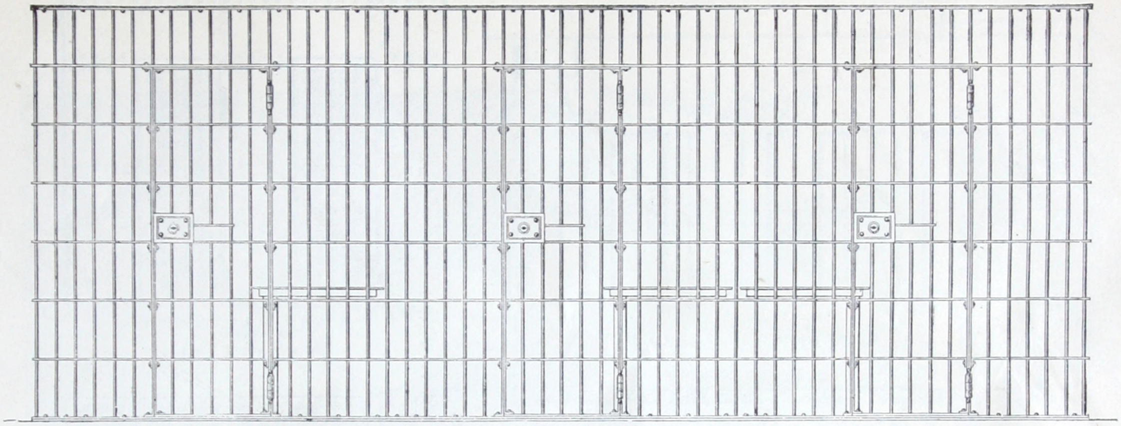


PLATE GIRDER

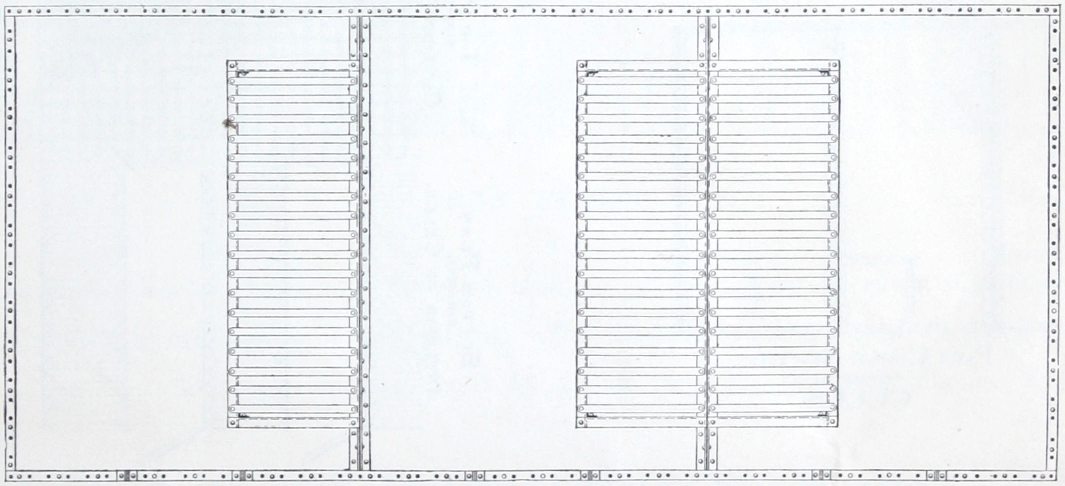
ANGLES, T-BARS, CHANNELS, BEAMS, AND GIRDERS.

THE illustrations on this page show several different forms of made and rolled sections for use in buildings. The upper row on the page gives a section of the ordinary rolled forms which are used in construction. To carry heavy walls, the plate and box girders shown in the lower row are especially designed. Where the span and the loads are too great for rolled beams, the ordinary plate girder, as shown, is particularly well adapted; but in case the walls are over 12 inches wide the box girder is better designed for the work, as it gives greater width. Where the wall is more than 20 inches wide, and the loads are very excessive, it is often necessary to use a triple box girder, the construction of which is also shown. The ordinary box girders can be made of any depth, or any width, up to 24 inches; but above that we recommend a triple box girder, which can be made any depth, or any width, up to 60 inches.

We carry in stock ordinary even-legged angle iron, from 1 inch × 1 inch × 3-16 inch to 6 inch × 6 inch × 3-4 inch, or uneven-legged angle of the ordinary sizes. We always have in stock a large assortment of plates, angles, T-bars, beams, channels, and girders, so that we are able to furnish any of these at short notice.



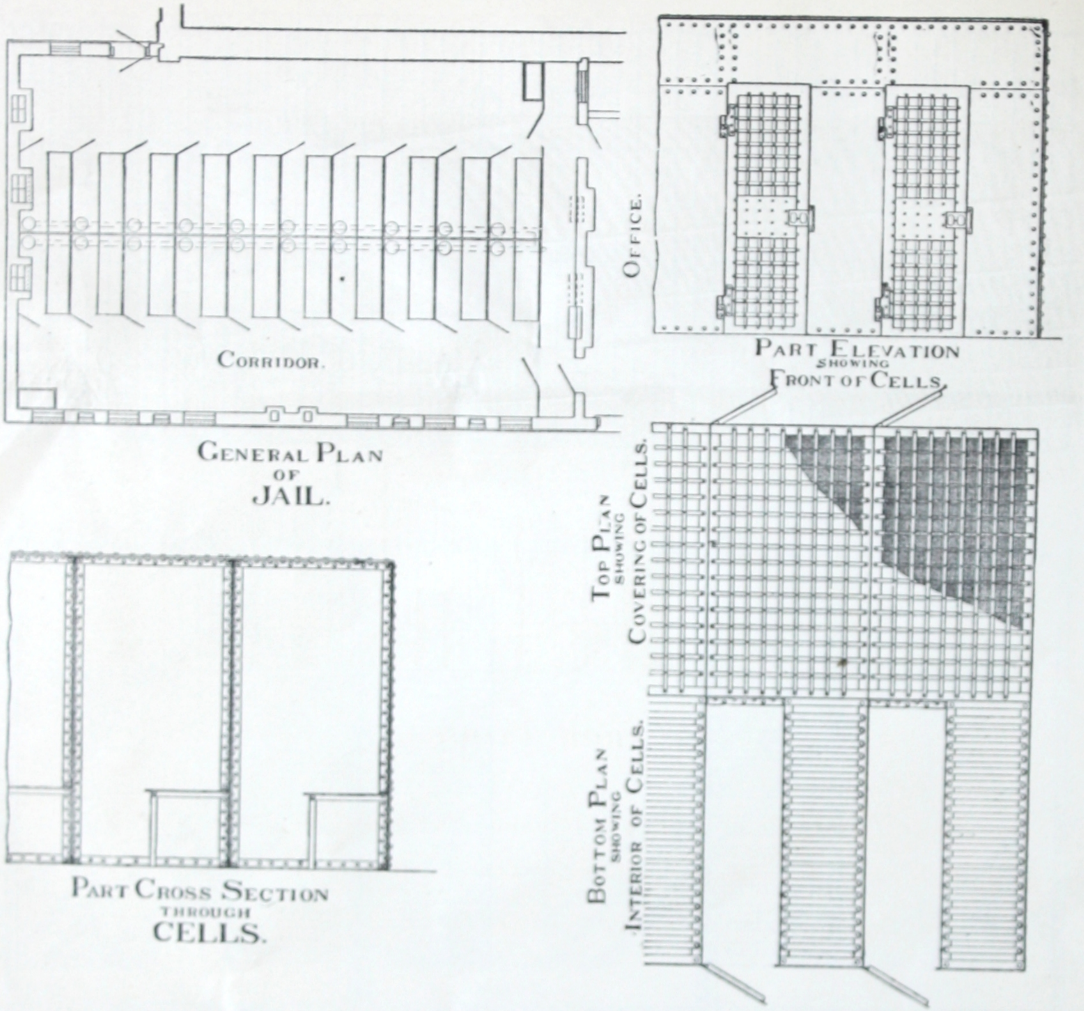
Elevation.



Plan.

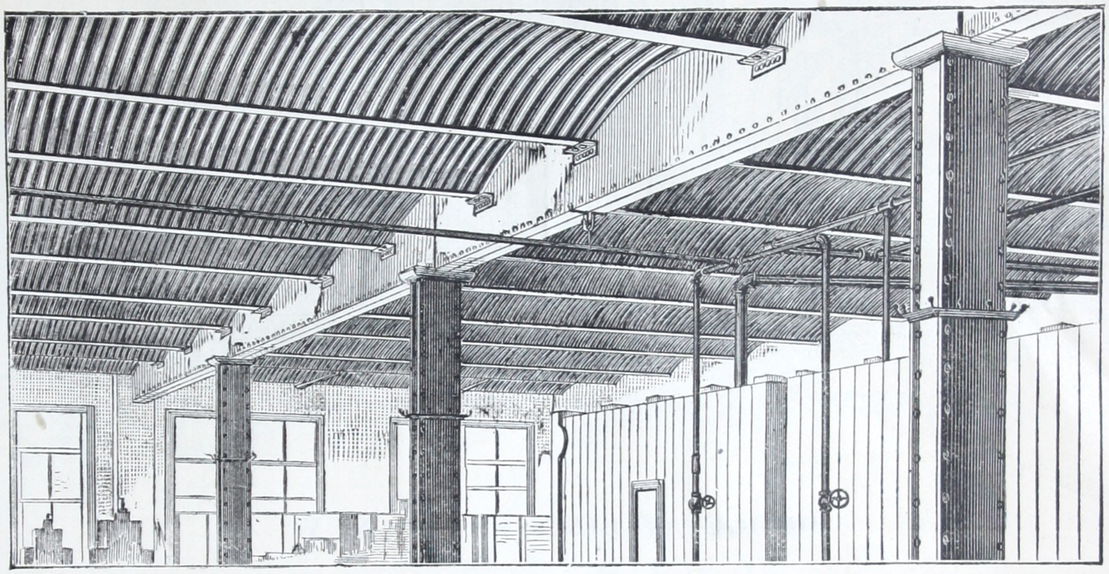
JAIL CELL.

THE CUT on this page represents an ordinary form of Jail Cell or Lock-up, of which we are building a great many. The illustration shows three cells, which can be placed in any ordinary room or hall, as they are complete in themselves, the sides, floor, and top being of iron, thus saving the expense of building a large amount of mason work. These cells are very valuable in small towns as furnishing a perfectly safe and reliable means of confinement for temporary criminals, tramps, etc. They are not designed to hold prisoners under long sentence, as such prisoners are generally consigned to the keeping of the county officials. These cells made of iron or steel are much cheaper than those made of stone or brick. Cells constructed in this way are much easier to clean, and keep clean, than if made of wood, brick, or stone. Each cell is provided with an iron bedstead securely riveted to the iron cell, thus preventing prisoners doing themselves bodily harm, or using portions of the bedstead for breaking out.


Corridor.
General Plan of Jail.
Office.
Part Elevation showing Front of Cells.
Top Plan showing Covering of Cells.
Part Cross Section through Cells.
Bottom Plan showing Interior of Cells.

IRON POLICE STATION AT WATERBURY, CONN.

THE CUT on this page shows the ironwork for a Police Station built by us for the city of Waterbury, Conn. The side walls are of brick and stone. In the center of the building, with a corridor on each side, there are placed two rows of jail cells, ten cells in each row, thus offering accommodations for twenty prisoners without using the corridor. Each cell is made with a back and sides of solid plate iron, thus preventing any communication whatever between the occupants of the different cells. For the purpose of light and ventilation, the tops of the cells are made of iron lattice, and, in order to prevent violent and insane prisoners from making any fastenings to the roofs of cells for the purpose of hanging themselves, a layer of fine wire netting is placed between the lattice bars, so that it is absolutely impossible to make any attachment whatever to the top of the cells. The front is made of solid plate, except the grated door, which is provided with a slide through which food can be passed without unlocking the door. In each cell is an iron cot bed thoroughly riveted to the sides and floor, making it perfectly immovable. This is probably one of the best designed police stations in the United States for a city of the size of Waterbury, as it combines a good, comfortable place for the detention of prisoners, and at the same time, a safe and reliable place of confinement. We should be pleased to furnish plans and estimates to parties desiring work in this line, either in iron or steel.



IRON FLOORS.

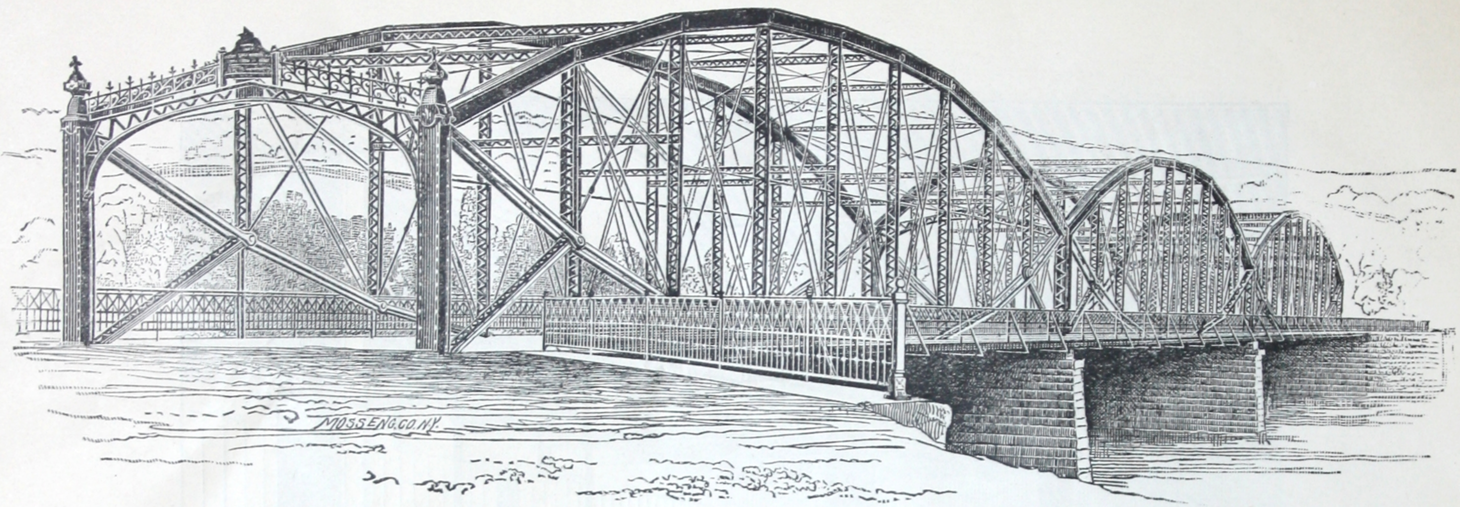
WHERE it becomes necessary to build a fire-proof building of more than one story, the floors should be made fire-proof as well as other parts of the building. The illustration on this page is taken from a photograph of the inside of an iron fire-proof building, built by us in 1880, for the Seth Thomas Clock Company, of Thomaston, Conn.

The reputation of The Seth Thomas Clock Company is world-wide, and in order to meet the large demand for their goods, it became necessary to build additional works. The management, believing that it would be economical to build a first-class fire-proof building, decided on the plan as shown.

The building is three stories high, with brick walls, iron floors and iron roof; no wood work being used in any part of the building, except for the wearing surface of the floor and the window casings.

Here we have a building which is as absolutely fire-proof as any building possibly could be, as the inside furnishings might burn out completely without endangering the walls or floors.

Parties contemplating buildings of this kind will serve their interests by writing us for plans and estimates.


MOSS ENG. CO. N.Y.

BRIDGE AT BINGHAMTON, N. Y.

THREE SPANS, 165 FEET EACH. ROADWAY, 24 FEET WIDE. TWO WALKS, 6 FEET WIDE EACH.

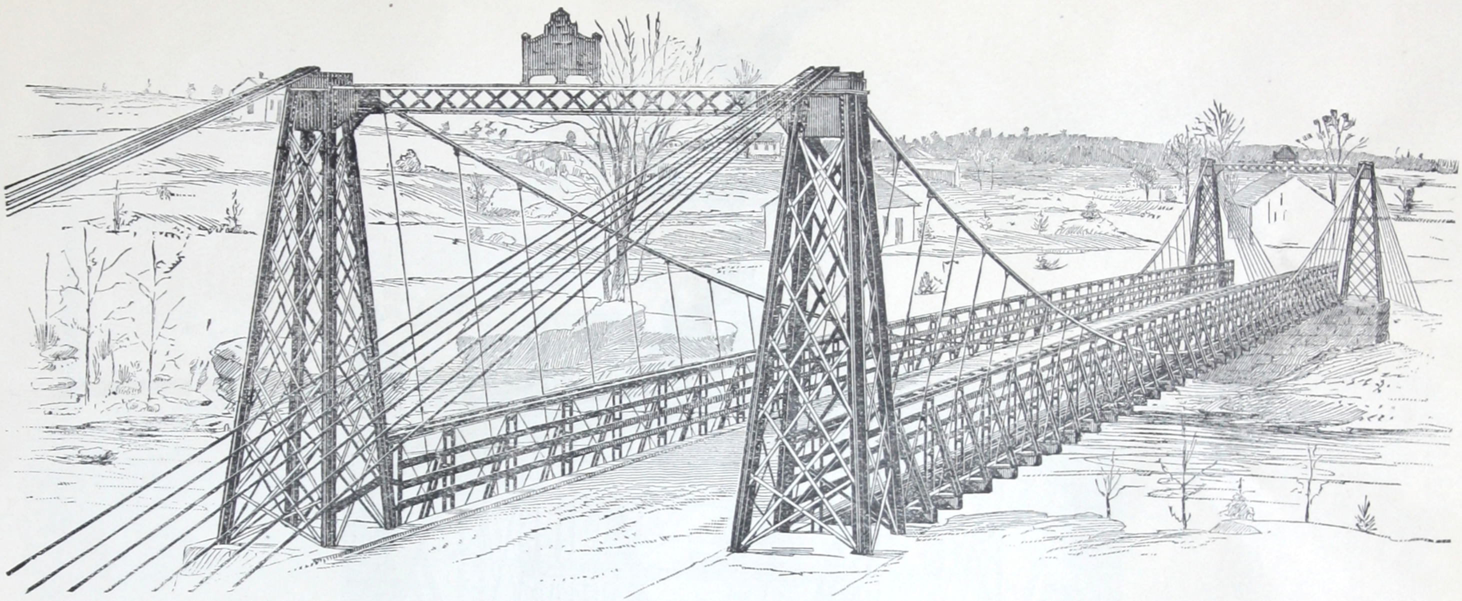
THE CUT on this page represents a bridge built by us in 1887, at Binghamton, N. Y. The bridge consists of three spans of one hundred and sixty-five feet each, with a roadway twenty-four feet wide in the clear, and two sidewalks, each six feet wide. The bridge is across the Susquehanna River, at the foot of Washington street, and takes the place of what has been known for a great many years past as "the old covered bridge." The bridge is located on the site of the original settlement of the city of Binghamton, which in olden times was known as "Chenang Pint."

The Washington street electric street railroad cars cross the bridge. These cars are run by electricity—the motor being placed in the car—and, therefore, when loaded with a crowd of people, are much heavier than the ordinary street car.

The bridge is on the direct route to Ross Park, and is crossed by many thousands of people every day, and by these street cars heavily loaded with picnic and excursion parties.

Ross Park is the only park in the city, and was presented to the city some years ago, through the munificence of Erastus Ross, Esq., and is a popular resort for church picnics and excursions.

Owing to the beautiful design of this bridge it has largely increased the value of property in the immediate vicinity. We furnished the whole bridge complete, from the foundation to the finish, doing all the work ourselves, with our own men, and with our own tools. The roadway is paved with asphalt pavement and has iron joists. Without a doubt it is the finest iron highway bridge in New York State, and second to no iron highway bridge in this country.

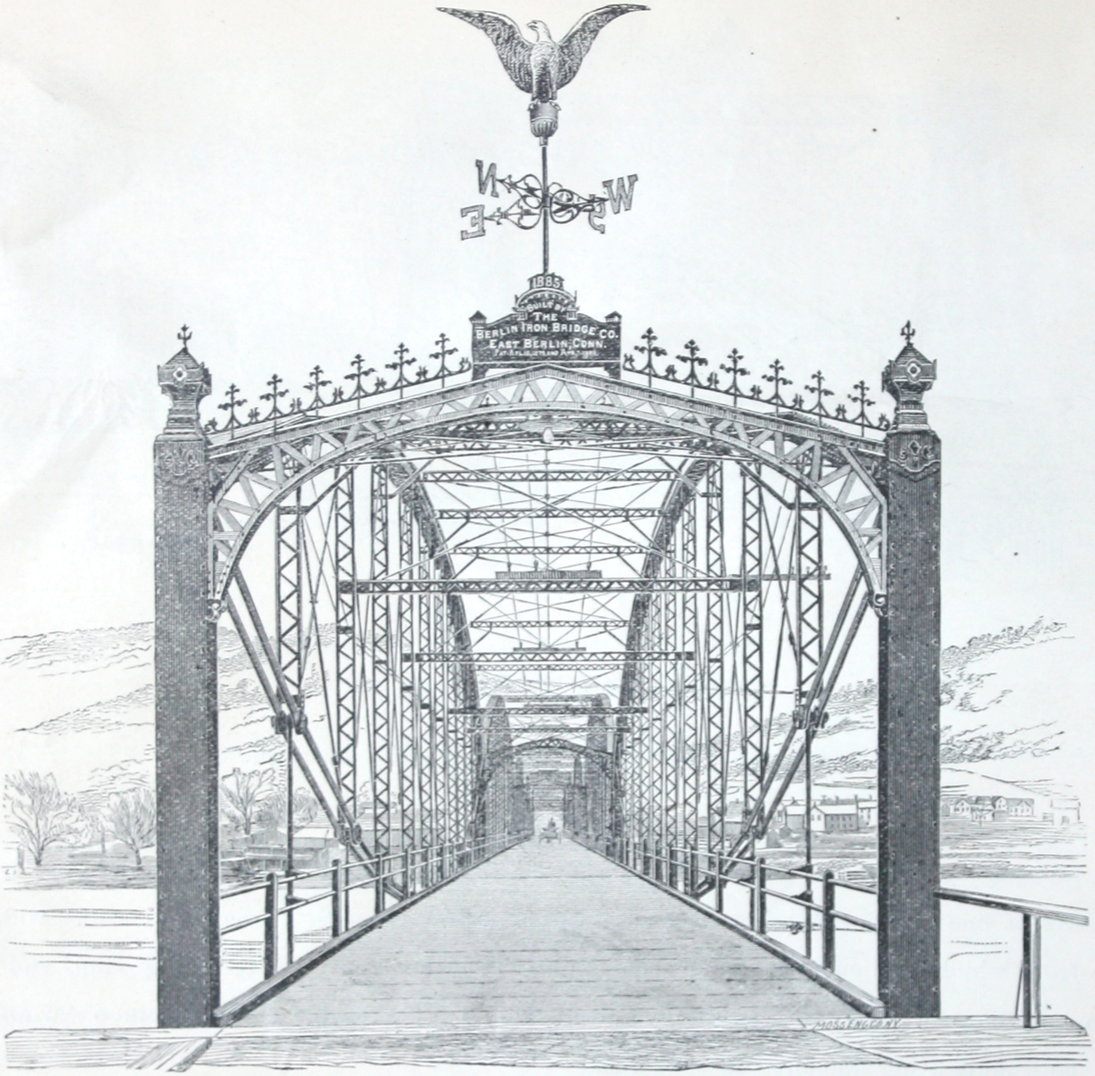


BRIDGE AT SHELDON, VT.

ONE SPAN, 250 FEET. ROADWAY, 16 FEET WIDE.

THE CUT on this page gives but a poor idea of a suspension bridge built by us during the year 1888, at Sheldon, Vt., consisting of one span of 250 feet center to center of towers, with a roadway 16 feet wide in the clear. The photograph from which this cut was made was taken when the snow was on the ground, and therefore does not show the construction as clearly and as forcibly as it should. The bridge is located in a farming region, over a terrific gorge, both ends being anchored in solid rock.

The Missisquoi River at this point has rocky banks, so that the expense of anchorage was very small, and made this form of construction the most economical that could be adopted. The bridge is not only firm and rigid vertically, but has great stability laterally, and is pronounced by the town authorities equal in rigidity and stability to any truss bridge which they ever saw. By making the stiffening truss of a suspension bridge heavy and strong, the panels short and well braced, a suspension bridge can be made of nearly equal rigidity to a truss bridge. There is no form of bridge more pleasing in outline than a suspension bridge.



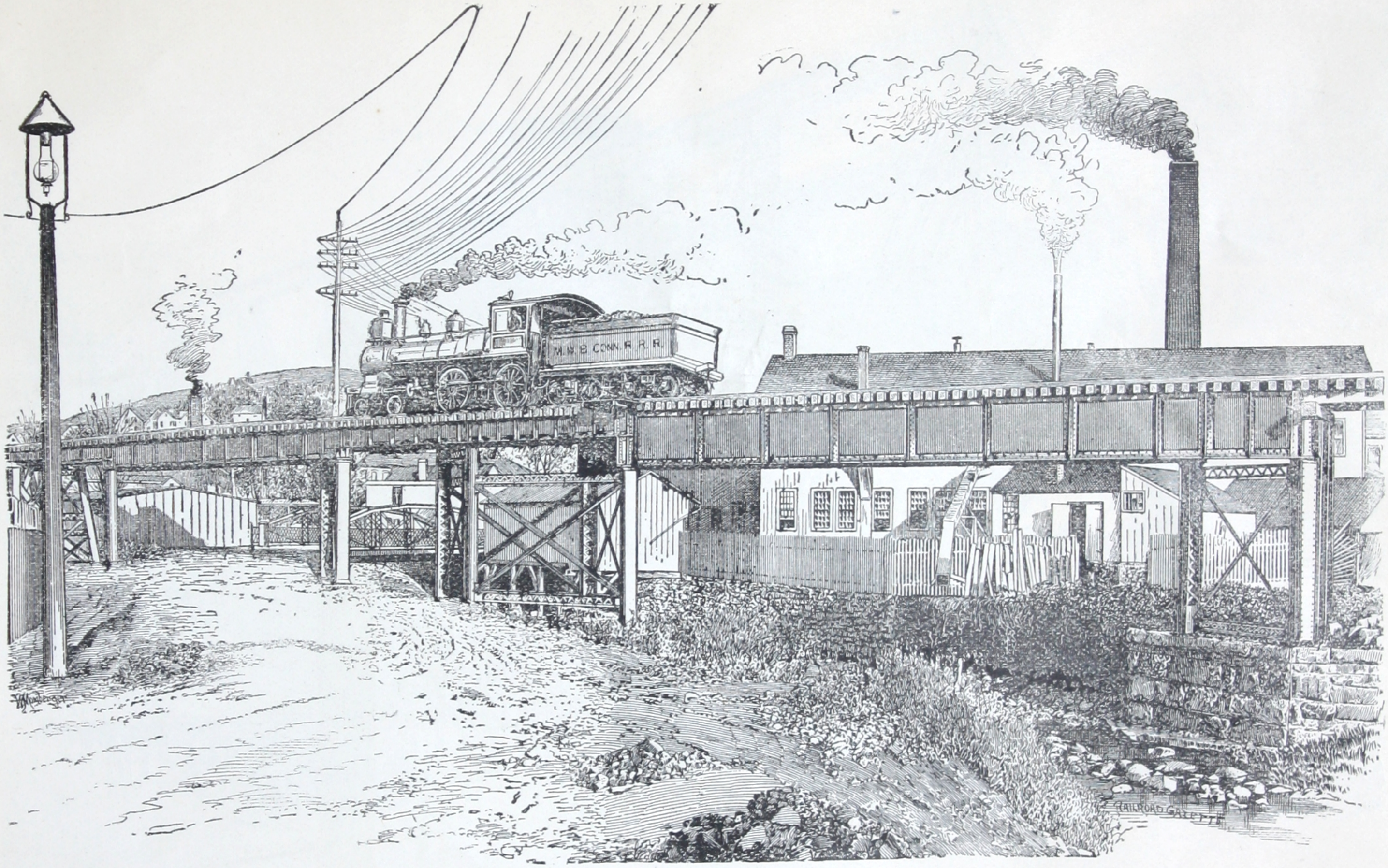
BRIDGE AT WILLIAMSPORT, PENNSYLVANIA.

FIVE SPANS, 200 FEET EACH. ROADWAY, 18 FEET WIDE.

THE CUT on this page shows a square end view of the largest iron highway bridge in the state of Pennsylvania, which was built by us in 1885, across the Susquehanna River at Williamsport, Pa. The bridge consists of five spans of 200 feet each, with a roadway 18 feet wide in the clear, and replaced an old suspension bridge which was built there many years ago, and which had become entirely too light to carry the largely increasing traffic.

The bridge is owned by a joint corporation, and is used as a toll bridge. Notwithstanding the large expense of taking out the old suspension bridge and putting in a new, first-class, modern iron bridge, the revenue returned to the stockholders has so greatly increased that the bridge has more than paid the extra cost involved.

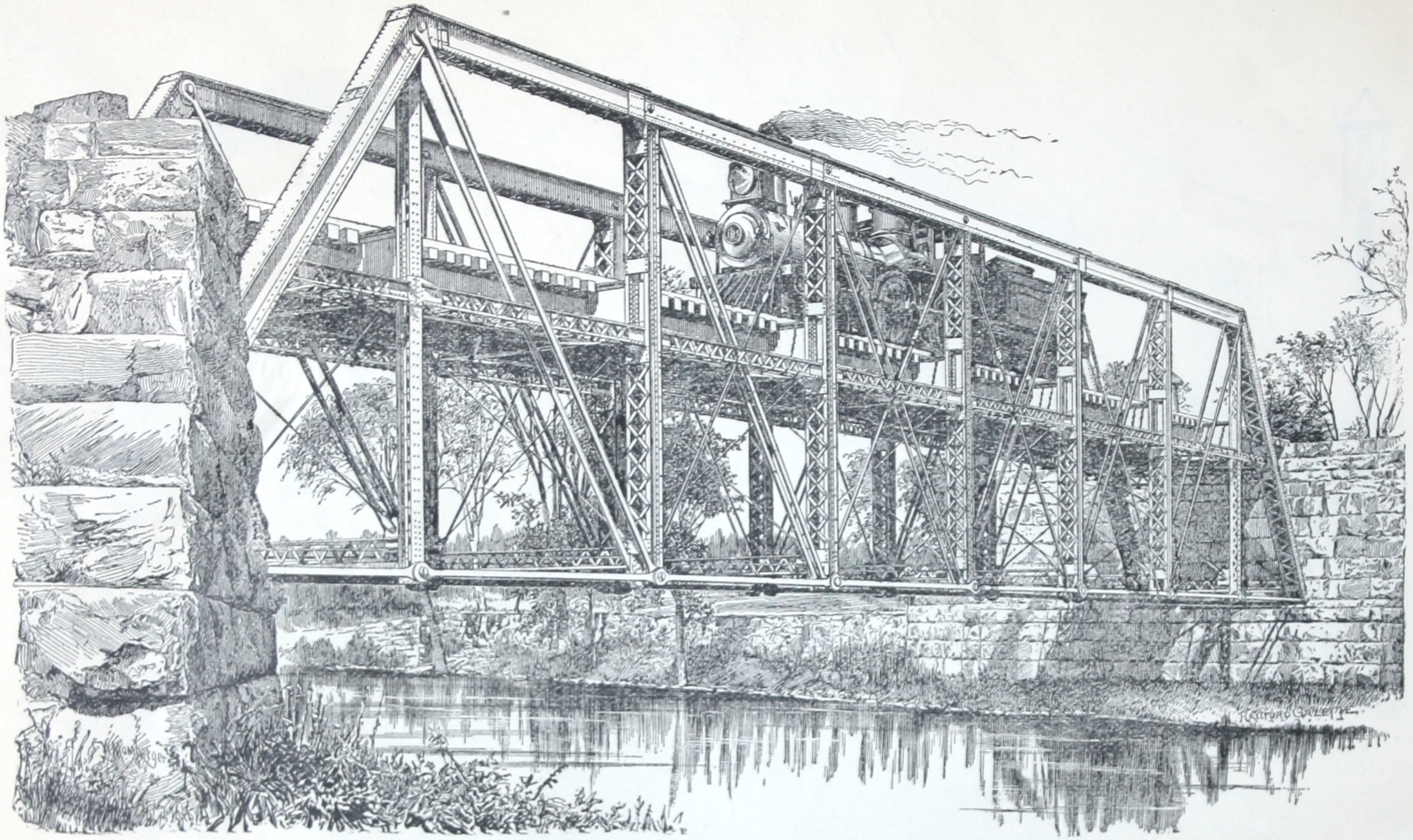
When the public get an idea that a bridge is weak or insufficient, and liable to collapse, they are not apt to cross it unless it is absolutely necessary; and where the revenue derived from a toll bridge depends entirely upon the amount of traffic, it is important that the bridge should be of the best material, of the best construction, and the best design possible to be obtained.



BRIDGE AT WATERBURY, CONN., ON THE MERIDEN, WATERBURY & CONNECTICUT RIVER RAILROAD.

THE above illustration is taken direct from a photograph of a bridge built by us on the Meriden, Waterbury & Connecticut River Railroad, at Waterbury, Conn. The bridge is what is known as a Deck Plate Girder Trestle, and carries the tracks of the Meriden, Waterbury & Connecticut River Railroad over the street. The illustration represents in a general way a large class of short railroad bridges which are usually built with plate girders. Our facilities for doing this class of work are second to no company in the country.

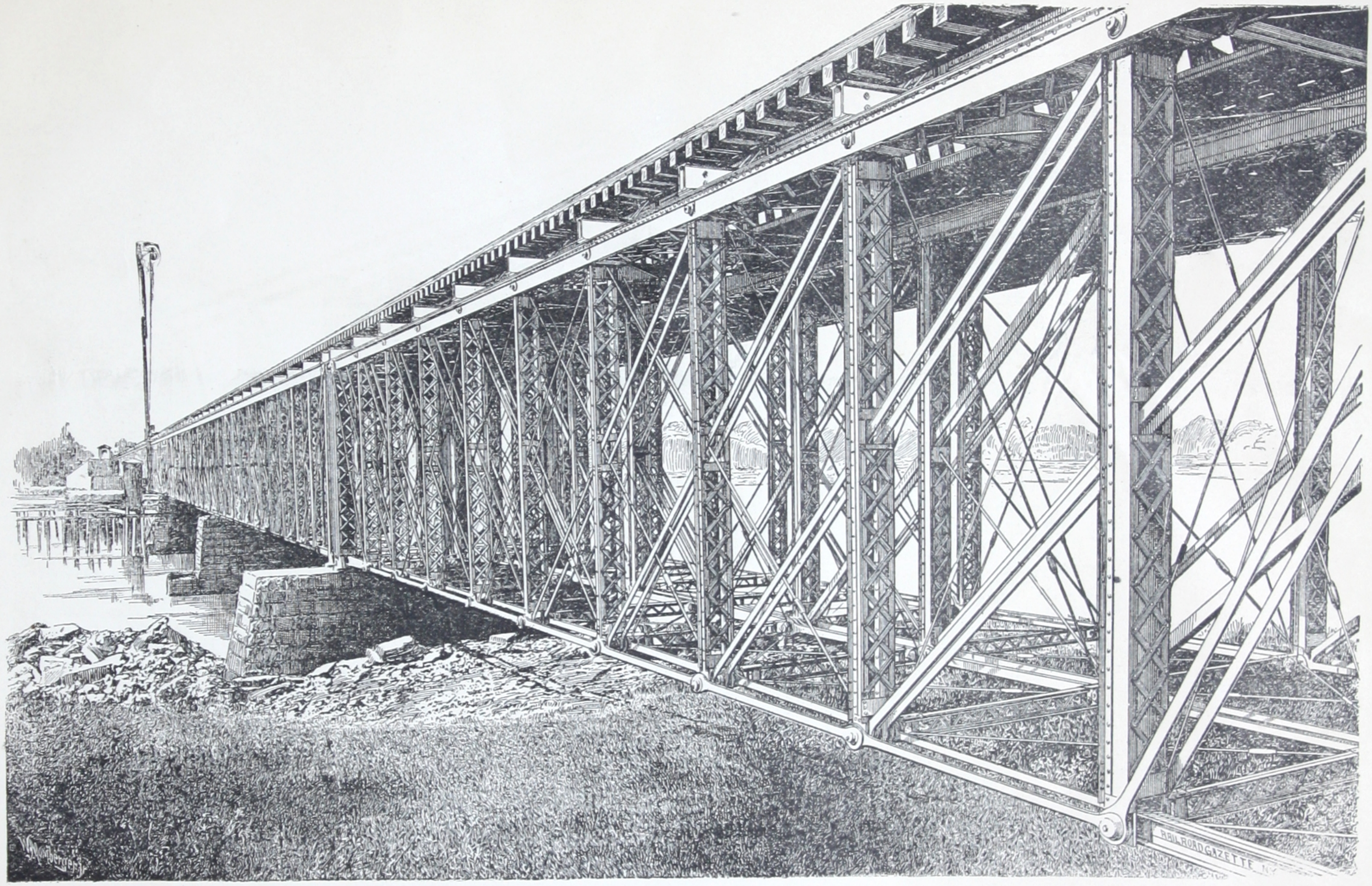
The plate girders for the Asylum Street Bridge at Hartford, Conn., were designed and built by us, and are the heaviest plate girders ever built in this country, each girder weighing 82,000 pounds. We invite correspondence on this class of work.



SINGLE TRACK RAILROAD BRIDGE ON THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD, AT TORRINGTON, CONN.

THE above illustration is taken direct from a photograph of an iron bridge built by us at Torrington, Conn., on a branch of the New York, New Haven & Hartford Railroad. The bridge has a span of 145 feet, and is what is known as a half deck; the floor beams being placed half way between the top and bottom chords.

The bridge has been very much admired for beauty of outline as well as for its extreme rigidity and mechanical design.

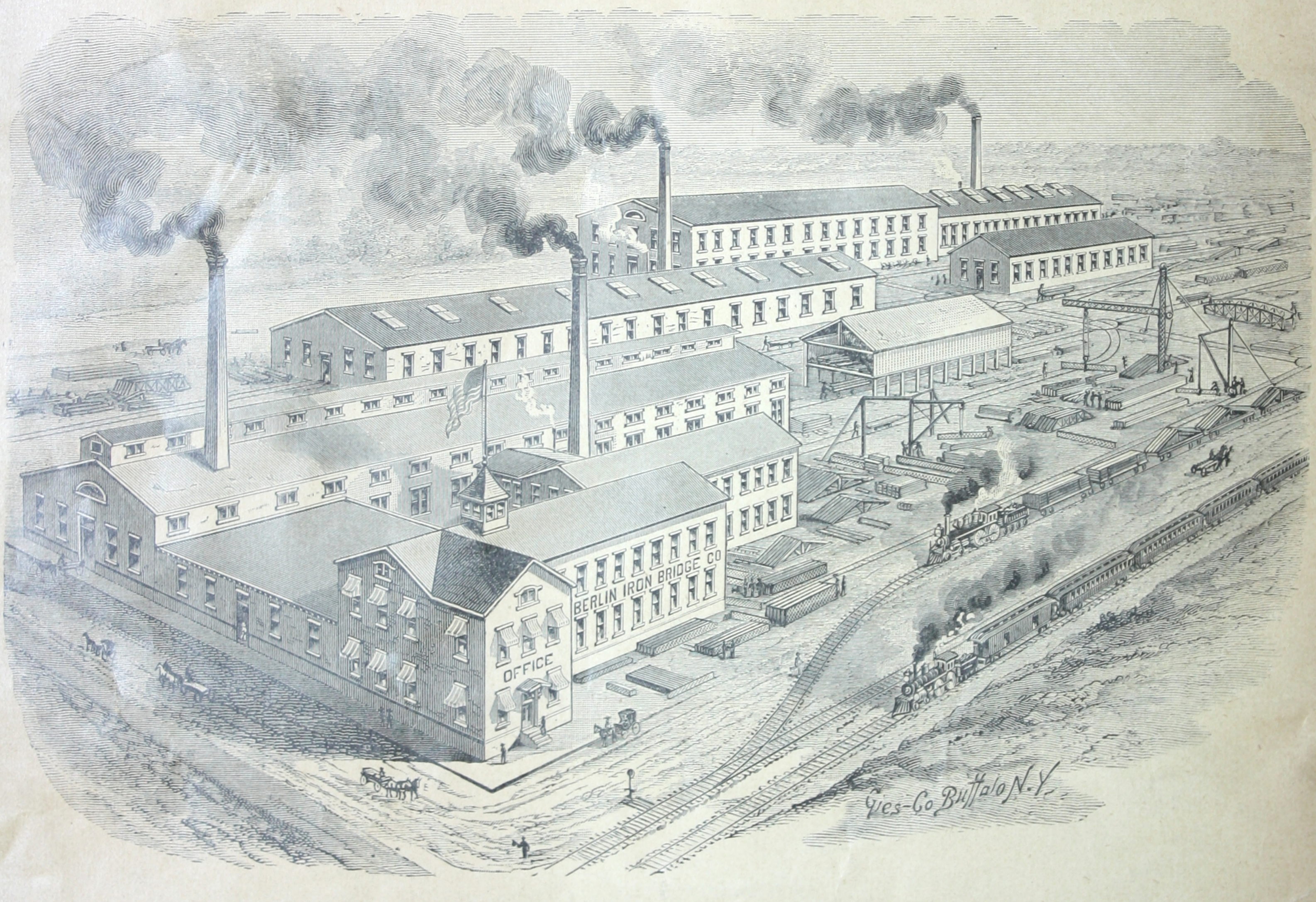


DOUBLE TRACK RAILROAD BRIDGE ON THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD, AT COS COB, CONN.

THE above illustration is taken direct from a photograph of a double track Railroad Bridge built by us for the New York, New Haven & Hartford Railroad, at Cos Cob, Conn., comprising three fixed spans and one draw span. The bridge is on the main line of the New York, New Haven & Hartford Railroad—New York Division—and has carried the extreme traffic of this line for a number of years. The bridge is a deck Pratt Truss, the floor beams being placed above the upper chord.

This bridge is pronounced by competent judges to be one of the best of a large number of railroad bridges in the State of Connecticut. We have built a matter of over fifty bridges for this one line of railroad, which are all in use for either highway or railroad traffic.

The New York, New Haven & Hartford Railroad is probably the best piece of railroad property in this country at the present time, and our work needs no better recommendation than to have it said that we are, and have been, for several years, doing almost all the work which that Company require, and that there is hardly a month in the year when we are not doing some work for them.



OFFICE AND WORKS AT EAST BERLIN, CONN.